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One of a group of studies on
FOOD, AGRICULTURE, AND WORLD WAR II

THE AGRICULTURAL ECONOMY OF THE DANUBIAN COUNTRIES 1935-45

By
S. D. ZAGOROFF
JENÖ VÉGH
and
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STANFORD, CALIFORNIA

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STANFORD UNIVERSITY PRESS, STANFORD, CALIFORNIA
PUBLISHED IN GREAT BRITAIN AND INDIA BY GEOFFREY CUMBERLEGE,
OXFORD UNIVERSITY PRESS, LONDON AND BOMBAY

HENRY M. SNYDER & COMPANY, INC., 440 FOURTH AVENUE, NEW YORK 16
W. S. HALL & COMPANY, 510 MADISON AVENUE, NEW YORK 22

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PRINTED AND BOUND IN THE UNITED STATES OF AMERICA BY STANFORD UNIVERSITY PRESS

Library of Congress Catalog Card Number: 55-6690

DIRECTOR'S PREFACE

This book is the eighth to appear in the Food Research Institute's series of some twenty volumes designed to illuminate the complex aspects of food, agriculture, and World War II. It falls into a group of studies dealing with wartime events in important countries or regions of the world. Books published earlier in this group have dealt with wartime events in German-occupied portions of Europe, in Japan, in India, in the Union of South Africa, in Australia and New Zealand, and in the United Kingdom.

The volume was originally designed to consist of four essays, each treating one of the four countries of the Danube Basin, now under Communist governments. Four competent scholars who had spent the war years or most of them in the countries concerned agreed to provide basic memoranda: Dr. S. D. Zagoroff for Bulgaria; Dr. A. D. Bilimovich for Yugoslavia; Mr. Jenö Végh for Hungary; and for Rumania an author who prefers to remain anonymous, through solicitude for family members remaining there. It later proved desirable to ask Dr. Zagoroff to join the Institute staff, in order to provide a synthesis of the four memoranda covering the Danube Basin as a whole and to reconcile, so far as necessary, both factual matters and points of view, which under the circumstances of the several authors could hardly be identical. The Institute is most grateful to all four authors for their co-operation which, it may be added, has involved final reading and approval of galley proof by all contributors.

Grateful acknowledgment is made to the Rockefeller Foundation for a grant of funds that made possible the preparation and publication of this work. The Foundation is in no way responsible for the treatment of the subject. The final responsibility, in general and in detail, rests with the individual authors.

M. K. BENNETT
Director

FOREWORD

The writing of the history of agriculture and food supply during World War II in the countries occupying the Lower Danube Basin was greatly handicapped by the lack of wartime data for Rumania and, especially, Yugoslavia, and the impossibility of obtaining information from any Danubian country after the war. When the national memoranda were compared, it became clear that their coordination could not yield a fully integrated generalization. Another solution had to be tried. The investigation was pushed back into the past in order to describe the history of the agrarian relations in that part of Europe and thus widen the background of the study. Furthermore, the analysis was refined in order to get the food balance of the region, by countries and as a whole, in terms of energy. The General Survey thus emerged as a separate study, using partly material contained in the national memoranda, partly additional information taken from other sources.

I wish to acknowledge the contributions made by Jenö Végh and A. D. Bilimovich. Mr. Végh, formerly Secretary General of the National Association of Manufacturers of Hungary, supplied a detailed analysis of Hungary's economic problems, which, unfortunately, could not be given in its entirety. Professor Bilimovich, who for many years occupied the chair of economics at the University of Ljubljana, was able to provide a systematic description of the structure of the Yugoslav economy in spite of the scarcity of statistical material.

I am indebted to M. K. Bennett, Director of the Food Research Institute, for his guidance in preparing the General Survey, and to V. P. Timoshenko for his critical reading of the complete manuscript. I also wish to express my gratitude to P. Stanley King for the great help he gave me in editing the present book and for drawing the maps; and to Josephina Butler for her work in the preparation of the manuscript and organizing the citations.

S. D. Zagoroff

NOTES TO TEXT AND APPENDIX TABLES

Metric units are implied unless otherwise indicated

. . .	Data not available
——	None, negligible quantity, or entry not applicable
1935/36	Year beginning in 1935 and ending in 1936
1935–39	Total or average for the five calendar years ending 1939

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GENERAL SURVEY OF THE AGRICULTURAL ECONOMY OF THE DANUBIAN COUNTRIES 1935-45

By
S. D. ZAGOROFF
(Edited by P. STANLEY KING)

CHAPTER 1

PHYSICAL CONDITIONS

If Budapest is taken as the dividing point between the Lower and Upper Danube, the Danubian Basin breaks down into two parts—an eastern part, the Lower Danube Basin, occupied by Hungary, Rumania, Yugoslavia, and Bulgaria, and a western part, the Upper Danube Basin, to which belong Austria, Czechoslovakia, and Bavaria in Germany. The present survey will consider only the Lower Danube countries.

The Lower Danube countries lie in southeastern Europe. It is correct to say this if the division of Europe according to the points of the compass is carried through strictly, i.e., if one omits the concept of Central Europe. Otherwise only Rumania, Yugoslavia, and Bulgaria would be included among the southeastern European countries, and Hungary would be considered as a part of Central Europe. In both cases, however, Southeastern Europe embraces other countries too, namely Albania, Greece, and Turkey in Europe, which occupy the southern part of the Balkan Peninsula.

It has become customary in scientific and political literature, as well as in official documents, to refer to the Lower Danube countries as the Danubian countries. For simplicity we shall adopt this conventional term.

The area and the population of the Danubian countries, in their prewar and postwar boundaries, are shown in the following tabulation:

	Hungary	Rumania	Yugoslavia	Bulgaria
Area (*1,000 sq. mi.*):				
Prewar boundaries, 1937[a]	35.9	113.9	95.6	39.8
Postwar boundaries, 1947[b]	35.9	91.7	99.2	42.8
Population, midyear (*thousands*):				
Prewar boundaries, 1937[a]	9,015	19,535	15,172	6,207
Postwar boundaries, 1948[c]	9,205[d]	15,873	15,772	7,100

[a] Data from *1*, p. 2; *2*, p. 41; *3*, p. 84; *4*, p. 21.
[b] Data from *5*, p. 83.
[c] Data from *6*, pp. 99–101.
[d] Census of January 1, 1949.

During World War II there were considerable changes in the territories of Rumania and Yugoslavia in favor of Hungary and Bulgaria (Map 1). Of these changes, the only one that remained in

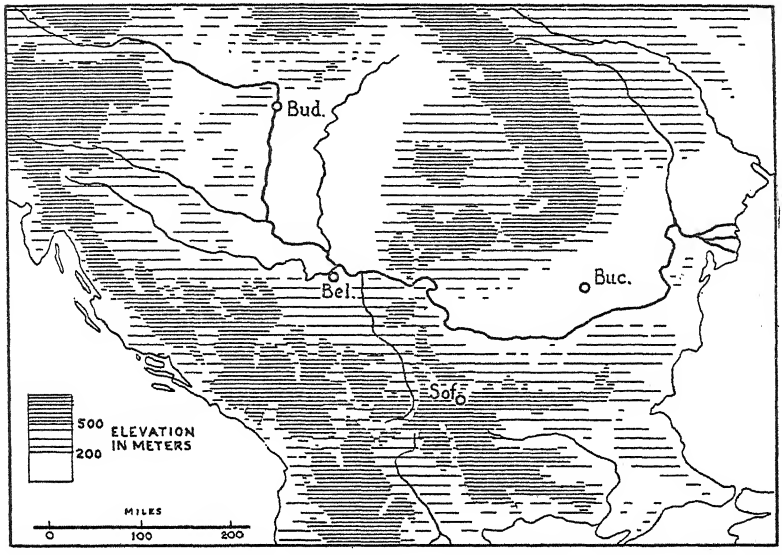
MAP 1.—PREWAR AND WARTIME BOUNDARIES OF THE DANUBIAN COUNTRIES

effect after the war was the transfer of Southern Dobruja from Rumania to Bulgaria. Rumania subsequently also lost Bessarabia and Northern Bukovina to the Soviet Union, while the increase in Yugoslavia is accounted for by a cession from Italy in 1947.[1]

Viewed from a very high perspective, the area occupied by the Danubian countries appears as two great plains, the so-called Hungarian (or Pannonian) and the Wallachian plains, and a labyrinth of mountains rising between the plains and the Mediterranean Sea (Map 2). The two plains are separated by the Carpathians and the Balkans (Stara Planina, Bulgaria) and belong predominantly to Hungary and Rumania. The mountains between the great plains and the Mediterranean Sea lie in Yugoslavia and Bulgaria. They embrace many small plains and valleys with highly diversified natural and cultural conditions.

[1] In 1947 Hungary ceded the Pozsony Bridgehead to Czechoslovakia; however, this area is so small (62 square kilometers) that the state territory of Hungary may be practically considered as unchanged.

MAP 2.—RELIEF OF THE LOWER DANUBE BASIN AND ADJACENT REGIONS



The proportion of plains to mountains in the Lower Danube Basin decreases generally from north to south. This is reflected in the ratio of cropland to state territory, which in 1938 amounted to 71 percent in Hungary and 55 percent in Rumania, as against 41 percent in Yugoslavia and 44 percent in Bulgaria.

The mountains of the Lower Danube region are of diverse structure and origin. The Carpathians and the Balkans are a branch of the Alpine Fold, which submerges into the Black Sea and rises again as the Caucasus Mountains in Asia. The mountains of Yugoslavia are another branch of the Alpine Fold. The Rodopi, the largest massif south of the Balkans in Bulgaria, belong to the old Armorican Fold, the remnants of which include the Central Plateau of Spain, the Bohemian Plateau, and other isolated blocks scattered from Ireland to Russia (7, p. 17).

In Yugoslavia lies the Karst region—the limestone mountain belt extending northeast of the peninsula of Istria—which gives its name to the karstic phenomena in geography. In the Karst, underground drainage shapes the relief in a chaotic way; surface soil is thin and vegetation sparse, and surface streams either are absent or run in deep, canyon-like gorges. Karstic lands occur not only in Yugoslavia, but also in western Bulgaria.

Like the greater part of Europe, the Lower Danube Basin has a temperate climate, i.e., except in the high mountains the temperature nowhere averages below 43° F. (6° C.) for longer than six months during the year, so that broad-leaved trees may grow at any place where rain and soil conditions allow (*8*, pp. 86, 94, 212–13).

The climate of the Lower Danube Basin is conditioned by the fact that this is the area where three types of temperate climate meet: the continental climate of Russia from the east (cold winter, hot summer, most rainfall in summer); the marine climate of the English Channel from the west (mild winter, cool summer, rainfall throughout the year), and the Mediterranean climate from the south (mild winter, hot summer, rainfall in winter). Thus the climate of Rumania is continental; the climate of Hungary is transitional between the marine and the continental types; while in the different districts of Yugoslavia and Bulgaria either the continental or the Mediterranean climate prevails, or the two types merge into each other.

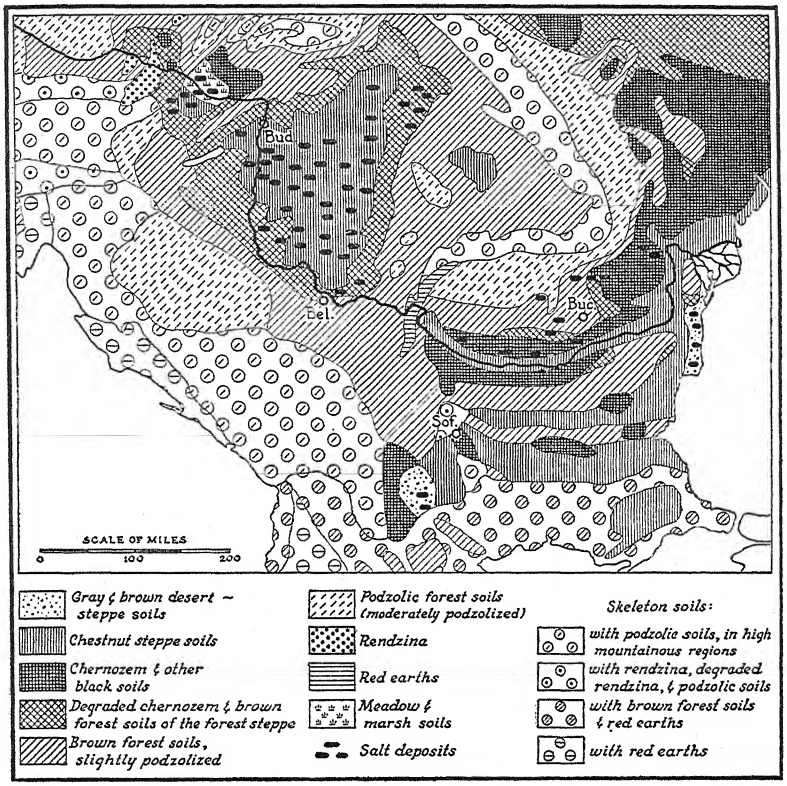
Bulgaria as a whole and a large part of Yugoslavia (Herzegovina, Montenegro, Serbia south of Chupriya, and Macedonia) lie south of the 44th parallel, i.e., far into geographical latitudes which might normally have a pure Mediterranean climate. Actually this region has in general a cooler climate, owing to its elevation (predominantly more than 1,000 feet above sea level), and to the influence of the cold northern and northeastern winds from the Russian steppes that penetrate the Balkan Peninsula from time to time during the winter. Only Dalmatia, the Vardar Valley (south of Veles, Macedonia) and the lake of Ohrid (Macedonia) in Yugoslavia, and the valleys of the Aegean rivers Struma (south of Cresna Pass), Arda, and Maritsa (south of Harmanly) in Bulgaria have a pure Mediterranean climate with rainfall largely in winter or late autumn (*9*, p. 12; *10*, pp. 6, 9).

In general the climate of the Lower Danube Basin is very good for agriculture; the total amount of moisture and heat and their distribution throughout the year ordinarily favor the growing of all crops which are characteristic for Europe and the United States (except citrus fruits). However, agriculture in Rumania, Yugoslavia, and Bulgaria suffers very much from great year-to-year fluctuations in rainfall—from frequent droughts which are most pronounced in the plains of Siret and Prut (Rumania), Dobruja (Bulgaria and Rumania), and Macedonia and Herzegovina (Yugoslavia).[2]

An idea of the geographical distribution of the several soil types in the Lower Danube Basin is given by Map 3, adapted from the

[2] For more detail on climate see *11*.

MAP 3.—SOILS OF THE LOWER DANUBE BASIN AND ADJACENT REGIONS*



* Based on the soil map of Europe prepared by H. Stremme and W. Hollstein (Danzig, 1927), in *Soil Science* (Baltimore, Md.), January 1928 (First International Congress of Soil Science: A Summary of the Scientific Contributions), p. 74.

general soil map of Europe prepared by Stremme and Hollstein for the First Soil Congress at Washington in 1927. The classification used in the mapping is a genetic soil classification, i.e., the distinction between the large soil groups is based on the soil-forming factors—climate in the first place—and not directly on the properties of the soil.

There are two striking facts regarding the soil formation in the Lower Danube Basin. First, the great variety of soil types: the range of soil variety is larger than is to be found in any other area of equal extent in Europe. This is due to the complex character of climate and relief of the Lower Danube Basin. Second, the great proportion

of steppe soils:[3] the Eurasian belt of chernozem and chestnut steppe soils runs from south Russia through the Wallachian Plain (Rumania) to the Hungarian Plain (Hungary, Yugoslavia) and to the plains on both sides of the Balkans (Stara Planina, Bulgaria). This reflects similarities in the geological and climatic conditions between south Russia and large parts of the Lower Danube Basin.

Reviewed country by country, soil conditions in the Lower Danube Basin give a fairly diversified picture. In Hungary a large area of degraded chernozem and chestnut soils is surrounded by brown forest soils. Unfortunately, some sort of saline (alkali) soils reduce the high natural fertility of the steppe-soil region in the great Hungarian Alföld (the eastern part of the Hungarian Plain). In Rumania the forest soils (brown forest soils associated with podsols) and the steppe soils (chernozem and brown steppe soils) form two more homogeneous regions. The forest-soil region occupies the mountainous part of the country—Transylvania, the Carpathians of Moldavia, and the Carpathians of Muntenia. The steppe soils cover the Wallachian Plain (along the rivers Danube and Prut) as well as the Rumanian territory in the Hungarian Plain. The possession of large deposits of chernozem makes Rumania the richest country as regards soil in southeastern Europe. In Yugoslavia forest soils strongly predominate. The steppe soils are represented by degraded chernozem and chestnut steppe soils, both types being concentrated in the area where the rivers Sava, Drava, and Tisza join the Danube, comprising eastern Slavonia and Vojvodina (Bachka, Banat, and Baranya). Chracteristic for the soil conditions in Yugoslavia is the large extent of "skeleton soils," i.e., soils the upper horizons of which are washed away ("soil ruins"). The region of skeleton soils in Yugoslavia to which also the Karst belongs (see p. 5) is only a part of a soil zone which runs parallel to the Adriatic coast through northern Italy, Yugoslavia, Albania, and Greece, beginning in the Alps and ending in the mountains of Peloponnesus. Cultivation of skeleton soils is very difficult. This partially explains the fact that Dalmatia, Bosnia, Herzegovina, and Montenegro have a deficit food balance. In Bulgaria the regions of forest and steppe soils have a latitudinal arrangement and merge with one another.

The soil map referred to above is, so to speak, a first approxima-

[3] The two basic groups of soils according to the classification used—"steppe soils" and "forest soils"—correspond to "arid" and "humid" soils in the sense of European pedology and to "pedocals" and "pedalfers" of the division by the founder of American pedology, Curtis Marbut.

tion of the real geographical distribution of soils in the Lower Danube Basin. It needs to be worked out in detail and corrected in several respects. More recent investigations have shown, for example, that there is no chernozem proper in Bulgaria[4] (*12*, p. 24).

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[4] The *Great Soviet Atlas of the World* (*Bolshoi Sovietskii Atlas Mira*) published in 1937, contains a soil map of the world which does not show any steppe soils in Bulgaria. Though based on essentially the same classification of soils as the Stremme-Hollstein map, it treats Bulgaria as one homogeneous region of forest soils. This oversimplification might be due to the scale of the map, which is very small (1:50,000,000 at 30° latitude). Detailed information on the geographical distribution of soils in Rumania is given by the soil map in *13*.

CHAPTER 2

POSITION OF AGRICULTURE IN THE NATIONAL ECONOMY

Though Rumania, Yugoslavia, and Bulgaria passed the stage of a pure agricultural economy many decades ago, they still may be called "agricultural countries," for agriculture plays a predominant role in their economic life. On the eve of World War II agriculture in these three countries was the largest production sector of the national economy, providing more than one-third of the net national product and employing more than two-thirds of the national labor force. In Hungary the position of agriculture was somewhat different. There the net product of manufacturing and construction was larger—though not considerably—than the net production of agriculture. Since 1948 industrialization has made substantial progress in Bulgaria.

POPULATION IN RELATION TO AGRICULTURE

Statistical data on the dependence of population on agriculture and on the share of agriculture in the national labor force are given in Table 1.

It is impossible to determine in a precise manner the ranking of the Danubian countries according to the dependence of the population on agriculture because the available statistical data relate to different years. No doubt Hungary was, before World War II, and is still far ahead of the other Danubian countries in the process of industrialization (49 percent of the population was dependent on agriculture in 1941). Yugoslavia, on the contrary, seems to be the country with the highest percentage of agricultural population (76 percent in 1930). Since the relative number of the population dependent on agriculture in the Lower Danube Basin has the tendency to fall and since the data for Bulgaria, given in Table 1, are more recent than those for Rumania, it may be concluded that as regards the dependence of the population on agriculture Bulgaria during the prewar decade was second to Yugoslavia and Rumania third.

The share of agriculture in the national labor force in the Lower

TABLE 1.—POPULATION IN RELATION TO AGRICULTURE*

(In thousands except as noted)

Country	Total population[a]		Population dependent on agriculture[a]		Labor force in agriculture[b]		Population dependent on agriculture as percent of total population[c]	Labor force in agriculture as percent of total labor force[c]
	1938	1939	1938	1939	1938	1939		
Hungary (Trianon territory) ..	9,082	9,129	4,450	4,473	2,092	2,102	49	48
Rumania	19,750	19,933	14,279	14,412	8,924[d]	9,008[d]	72	78[d]
Yugoslavia ..	15,490	15,703	11,772	11,934	5,651	5,728	76	76
Bulgaria	6,273	6,308	4,579	4,605	2,839	2,855	73	80
United States (continental territory) ..		131,669[e]		30,547[e]		9,163[e]	23	18

* Data from Hungary, Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Évkönyv, 1941* (1943); Rumania, Institutul Central de Statistică, *Anuarul Statistic al României, 1939 şi 1940* (1940), pp. 41, 404; Yugoslavia, Statistique générale d'état, *Annuaire statistique, 1940* (1941), pp. 21, 31, 84; Bulgaria, Direction générale de la statistique, *Annuaire statistique du Royaume de Bulgarie, 1942* (1942), pp. 21, 50, 52; U.S. Dept. Comm., Bur. Census, *Statistical Abstract of the United States, 1950* (1950), pp. 172, 561; United Nations, Stat. Off. in collaboration with Dept. Soc. Affairs, *Demographic Yearbook, 1948* (Lake Success, 1949), pp. 82–83, 242–50; Food and Agriculture Organization of the United Nations, *Yearbook of Food and Agricultural Statistics, 1949*, I (Washington, 1950), 24–26.

[a] Estimates for December 31, 1938 and 1939 (Rumania, July 1).

[b] The absolute figures for the Danubian countries are computed on the basis of official estimates of the total population for December 31, 1939 (Rumania, July 1) and the percentages given in the last two columns of the table.

[c] *Hungary*: population census of January 1941; *Rumania*: agricultural census of December 1930; *Yugoslavia*: population census of March 1931; *Bulgaria*: population census of December 1934. The percentages for the United States are based on the absolute figures of the preceding three columns, and hence relate to April 1940. (The number of total labor force for April 1940, revised estimate, was 52,148,251.)

[d] Including servants in agricultural households.

[e] The absolute figures for the United States are from official statistical publications. They all relate to April 1940. "Population dependent on agriculture," i.e., farm population, is defined as all persons living on farms regardless of occupation, and "labor force in agriculture" as all persons 14 years old and over engaged in agricultural pursuits during the census week.

Danube Basin is higher than the percentage of agricultural population in the total population (Hungary alone provides an exception to the rule). This reflects the more intensive use of labor of young and old people, as well as of women, in agriculture as compared with the various other branches of economic activity. In analyzing the figures presented in Table 1 one is surprised to find that in 1939 the United

States had, roughly speaking, only as much agricultural labor force as Rumania, though her agricultural population was twice as large. This is due to the fact that in the United States the farm women typically do not work in the fields, whereas in the Danubian countries, especially in Rumania and Bulgaria, they form an important part of the agricultural labor force. The relative share of females in the economically active population in agriculture approximates 50 percent in Rumania and Bulgaria, 40 percent in Yugoslavia, and 25 percent in Hungary, as against 5 percent in the United States.

NET PRODUCT OF AGRICULTURE

During the two-year period 1938–39 the net product of agriculture (net value of agricultural output) made up about 34 percent of the net national product (national income) in Hungary, and about 41 percent in Yugoslavia and Bulgaria. Table 2, on which this statement is based, does not show the relative size of the contribution of agriculture to the national income in Rumania,[1] but there is no reason to believe that the respective percentage for Rumania would differ very much from that for Yugoslavia and Bulgaria.

It should be pointed out that the years 1938 and 1939 covered by Table 2 are not freely chosen. This is so for the most recent period for which simultaneous data for a complete analysis of net product of agriculture in the Danubian countries are available. Even in this case the figures on net product of agriculture in national currency for Yugoslavia for 1939 and for Bulgaria for 1938 had to be found by extrapolation of existing official series. Furthermore, had the treasury of *Farm Accountancy Statistics* of the former International Institute of Agriculture (*4*) not been discovered as a source of material for the computation of net product of agriculture, it would not have been possible to include Rumania in Table 2. The net product of agriculture in Rumania has been estimated with the help of the sampling method of observation—i.e., by multiplying the agricultural area of the country by the average net product ("social income" as it is called in *Farm Accountancy Statistics*) per hectare of the land in farms reporting to the national accounting offices.

[1] Data on Rumania's national income are lacking. The existing estimates of the net national product of this country do not go beyond 1933. C. Evelpidi gives the figure 59.9 percent for the contribution of agriculture to national income during 1932 in Rumania (*1*, p. 163). It would, however, be erroneous to compare this high percentage with the corresponding percentage in Table 2, because it includes the net product of the trade in agricultural products. Evelpidi cites as sources of his data on Rumania's national income two publications, 2 and 3.

TABLE 2.—NET PRODUCT OF AGRICULTURE AS COMPARED WITH GROSS RETURN FROM AGRICULTURE AND NET NATIONAL PRODUCT*

(Millions of currency units except as noted)

Country and year	Net national product		Gross return in agriculture			Net product of agriculture				
				In dollars			In dollars		As percentage of	
	In national currency	In dollars (actual exchange rate)	In national currency	At actual exchange rate	At adjusted exchange rate	In national currency	At actual exchange rate	At adjusted exchange rate	Net national product	Gross return (net-product quota) in agriculture
Hungary (Trianon territory):	*Pengö*		*Pengö*			*Pengö*				
1938/39	5,192	1,018	2,559	502	369	1,745	342	251	33.6	(68.2)
1939/40	5,940	1,111	2,975	556	428	2,029	379	292	34.2	68.2
1938/39–1939/40	5,566	1,065	2,767	529	398	1,887	361	272	33.9	68.2
Rumania:			*Lei*			*Lei*				
1938	...	...	102,669	596	596	88,089	511	511	...	85.8
1939	...	...	101,060	566	566	85,388	478	478	...	84.4
1938–39	...	...	101,865	581	581	86,739	495	495	...	85.2
Yugoslavia:	*Dinars*					*Dinars*				
1938	46,814	861	...	...	...	19,112	352	319	40.8	...
1939	...	...	...	...	...	(19,876)	(362)	(302)	...	...
1938–39	...	...	...	...	(443)	19,494	357	311	...	(70.4)
Bulgaria:	*Leva*		*Leva*			*Leva*				
1938	...	...	31,931	282	220	(21,521)	(190)	(148)	...	67.4
1939	56,892	499	36,207	318	244	23,246	204	157	40.8	64.2
1938–39	...	...	34,069	300	232	22,383	197	153	...	65.7
United States (continental):										
1939		72,532		9,121[a]			5,548[a]		7.6	60.8
1940		81,347		9,618[a]			5,601[a]		6.9	58.2
1939–40		76,940		9,370[a]			5,575[a]		7.2	59.5

* For sources see Appendix A, pp. 94–95.

[a] Excluding government payments.

Net product of agriculture in national currency for the two years 1938–39 averaged 1,887 million pengö in Hungary, 86,739 million lei in Rumania, 19,494 million dinars in Yugoslavia, and 22,383 million leva in Bulgaria (see Appendix A, p. 92). Converted into dollars according to the "actual" rates of foreign exchange, these values give the series 361 million dollars for Hungary, 495 million for Rumania, 357 million for Yugoslavia, and 197 million for Bulgaria.

But this result does not mean that in real terms the net product of agriculture in Hungary was as large as the net product of agriculture in Yugoslavia, or about 25 percent smaller than the net product of agriculture in Rumania, and so on; nor that in Hungary, for example, such quantities of goods were produced by agriculture, in excess of existing stocks and under maintenance of fixed real capital, as one could buy for 361 million dollars in the United States. The international purchasing-power disparity of the currencies with respect to agricultural products, or, in other words, the price disparity in agriculture between the Danubian countries and the United States prevents us from drawing such conclusions. Only when the price systems, i.e., the ratios between the prices of agricultural products in national currency, are the same and, in addition, the actual foreign-exchange rates are such as to make the prices of agricultural products, expressed in the same monetary unit, equal for the countries compared, do the differences in the actual net value of agricultural production measure differences in real net output.

As no quantity and price data are available to compute the net values of agricultural output in the Danubian countries at equal prices, a substitute—a short-cut method—has been used. It rests on the idea that the difference between price levels in space, i.e., in different countries at the same time, depends on the rate at which the currencies of the respective countries are exchanged. Let us speak, for the sake of simplicity, of Bulgaria as "the given country" and the United States as "the base country." If the percentage disparity between prices in both countries (expressed in the same currency) does not differ from commodity to commodity very much, the net (or gross) value of Bulgaria's agricultural output at United States prices in dollars must be approximately equal to the value of Bulgaria's agricultural output at Bulgarian prices in leva, converted into dollars at an exchange rate (dollars per lev) which is so much percent lower (or higher) than the actual exchange rate as the United States prices of agricultural products are on the average lower (or higher) than

the Bulgarian prices, both sets of prices being expressed in the same monetary unit.[2] It has been found that on the eve of World War II producers' prices of agricultural products in the Danubian countries (at the actual rates of exchange) were at different levels and generally higher than in the United States. They stood approximately in the following relations:[3]

Country	1938	1939
Hungary	130	130
Rumania	100	100
Yugoslavia	110	120
Bulgaria	128	130
United States	100	100

The actual foreign-exchange rates have been adjusted proportionally to the above figures on price disparity. For example, the rates of the pengö (Hungary) were divided by 1.3, while the rates for the leu (Rumania) required no change.

[2] This can be easily proved by the formula: $\Sigma p_a q_b = \frac{R}{N_{b/a}} \Sigma N_{b/a} \bar{p}_a q_b$, where, with reference to our example, p_a denotes price in the United States in dollars, $\bar{p}_a$ denotes price in the United States in leva, q_b denotes quantity in Bulgaria, R denotes exchange rate (dollars per lev), $N_{b/a}$ denotes price disparity (interspatial-price index) between Bulgaria and the United States in the given sector of the price system, prices for both countries expressed in the same currency.

If the dispersion of the interspatial-price ratios is zero, $N_{b/a} = \frac{p_b}{\bar{p}_a}$ and $\Sigma p_a q_b = \frac{R}{N_{b/a}} \Sigma \frac{p_b}{\bar{p}_a} \bar{p}_a q_b = \frac{R}{N_{b/a}} \Sigma p_b q_b$; here p_b denotes price in Bulgaria in leva.

[3] The figures for the Danubian countries have been reduced by 5 percent to allow for price support (since price data for the United States do not include government payments) and for exchange-rate margins (the quotations of exchange rates are midpoints between buying and selling rates; see 5, p. 221). The statistical data used in the exchange-rate adjustment are shown in Appendix A, p. 91. The commodities on which the interspatial-price indexes (unweighted arithmetic means) are built up are: wheat, maize, barley, oats, rye, dried beans, potatoes, soybeans, alfalfa, and wild hay.

For Hungary and Bulgaria, the price disparity in 1938 ($N_{ob/a}$) has been derived from the price disparity in 1939 ($N_{1b/a}$) with the help of the formula $N_{1b/a} = N_{ob/a} \cdot \frac{I_{1/ob}}{I_{1/oa}} \cdot \frac{R_1}{R_o}$, in which $I_{1/ob}$ and $I_{1/oa}$ measure the change of the general price level (1938–39) in the given and in the base country, respectively (the other symbols are explained in footnote 2). For discussion of the above formula see 6, pp. 643–45.

Data on price changes used: United States, index of prices paid to farmers; Hungary, wholesale-price index (farm products); Bulgaria, ratio of net product of agriculture in 1938 at 1939 and 1938 prices, computed by the Bulgarian Haute Chambre d'Économie Nationale in Sofia.

The adjusted exchange rates (cents per monetary unit) are: 1938—pengö 15.08, leu .58, dinar 1.67, lev .69; 1939—pengö 14.38, leu .56, dinar 1.52, lev .675. For Hungary, 1938/39 and 1939/40, the rate of 14.4 has been applied.

This is a surprising result, inasmuch as in another plane of comparison—in terms of retail prices of agricultural products—the dollar had, and still has, a higher purchasing power abroad than in the United States; that is to say, retail prices in dollars (at the actual rates of exchange) outside of the United States are generally lower.[4]

Country	1938
Hungary (Budapest)	65
Rumania (71 cities)	41
Yugoslavia (10 cities)	54
Bulgaria (all cities)	48
United States (51 cities)	100

The simultaneous existence of two opposite purchasing-power disparities for the United States currency in international comparisons is explained by the fact that costs of processing and distributing all kinds of products are generally much higher in the United States, owing to the higher remuneration of labor per unit of output paid in that country.[5]

In dollars at adjusted exchange rates—at current United States prices, so to say—the net product of agriculture in the Danubian countries was lower than at the actual exchange rates, namely 272 million dollars in Hungary, 495 million in Rumania, 311 million in Yugoslavia, and 153 million in Bulgaria (1938–39 average), as against 5,575 million dollars in the United States (1939–40 average; see Table 2).

In his study of the economic and demographic conditions in eastern and southern Europe, Wilbert Moore has arrived at similar results (*8*).[6] The figures on agricultural production that he gives are very closely related to the figures of the present survey. This can be seen from the tabulation on the next page.[7]

[4] Index numbers (unweighted arithmetic means), constructed from data on high-grade white flour, white bread, potatoes, veal, pork, milk, butter, cheese, and eggs, show the following relation:

[5] According to an investigation of the United States Department of Agriculture, farmers in the period 1935–39 received 40 percent out of the average consumer's dollar spent for food products (see 7, p. 6).

[6] On Moore's findings rests the chapter, "Economic Productivity in Agriculture," of another publication of the League of Nations (*9*).

[7] In a report of the Food and Agriculture Organization of the United Nations (*10*), covering the work which it has been developing during the last three years in the construction of index numbers of food and agricultural production, there is a table (p. 18) containing the "Aggregates of Food and Agricultural Production, Prewar and Postwar," i.e., the hypothetical gross values of agricultural output at "world export prices," expressed in gold francs of fine gold content .29 grain (e.g., Swiss francs of official gold parity of 1929).

Country	Moore:[a] Value of agricultural production 1931–35 average (*million crop units*) (1)	Present survey: Gross return from agriculture 1938–39 average (*million dollars at adjusted exchange rate*) (2)	Ratio of the two series (2) ÷ (1)
Bulgaria	82	232	2.83
Hungary (Trianon territory)	149	398	2.67
Yugoslavia	178	443	2.49
Rumania	272	581	2.14

[a] Data from *8*, p. 181.

Moore's figures on agricultural production are compared here with our figures on gross return and not on net product of agriculture, because the magnitude he estimates — which may be defined as "gross value of animal production plus value of crops harvested by man less value of shrinkage, seed, and feed"—stands much nearer to gross value than to net value of agricultural output (*5*, p. 218).

In fact, if allowance is made for seed, Moore's estimate relates to gross return in an "economy of isolated farms," or—practically—to gross value of agricultural output in a country in which interfarm transactions are very small.

Moore's figures are in terms of "crop units." This conveys the impression that the method he used on the suggestion of Adolf Kozlik (*8*, p. 145), in the attempt to compare aggregates of different kinds of products in space, offers a new solution of this problem of measurement. Actually, however, Moore's method is a version of the

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The figures relating to the Danubian countries and the United States, 1934–38 average, are (in million gold francs):

Hungary	1,080
Rumania	1,446
Yugoslavia	1,449
Bulgaria	691
United States	22,966

As far as Bulgaria and Rumania are concerned, the FAO figures are not comparable with the figures on which the present survey is based, because the prewar data of the FAO computation refer to the postwar boundaries and the state area of both countries changed considerably. The figures for Hungary and Yugoslavia, however, are insignificantly affected by territorial changes. An interspatial comparison of the FAO figures (which would mean applying Lowe's quantity-index formula in space) confirms—qualifications made for the system of weighting and time—the results we have arrived at: in real terms gross agricultural output in the United States on the eve of World War II was about 20 times larger than in Hungary, 22,966 ÷ 1,080 = 21.3 (FAO) or 9,370 ÷ 398 = 23.5 (Food Research Institute).

quantity-index method—of the same method which is applied, though in a modified form, in the present survey (see Appendix A, p. 91).

DETERMINANTS OF NET PRODUCT OF AGRICULTURE PER HEAD OF LABOR FORCE

If net product of agriculture (net value of agricultural output) is related to the agricultural labor force, the following *per head* figures are obtained: Hungary 129.7 dollars, Rumania 55.2, Yugoslavia 54.7, Bulgaria 53.7, and United States 608.4 (at adjusted foreign-exchange rates, 1938–39 average, for the Danubian countries; 1939–40 average for the United States).

An analysis of these figures may be attempted using data on the gross return (gross value of agricultural output) per unit of land, the average net quota of net product in agriculture (net product as a fraction of gross return), and the cropland per head of agricultural labor force (ratio of the agricultural working population to the area of arable land, including fallow, of permanent meadows, and of orchards and vineyards).

The following equation shows how these four ratios are related:

$$\frac{\text{Net product of agriculture}}{\text{Agricultural labor force}} = \frac{\text{Gross return from agriculture}}{\text{Cropland}} \times \frac{\text{Net product of agriculture}}{\text{Gross return from agriculture}} \times \frac{\text{Cropland}}{\text{Agricultural labor force}} =$$

$$\text{Gross return per hectare of cropland} \times \text{Average quota of net product in agriculture} \times \text{Cropland per capita of agricultural labor force}$$

Data on the determinants of net product of agriculture per head of labor force are summarized in Table 3.

Table 3 throws light upon the basic facts of agriculture in the Lower Danube Basin. Though the numerical values of the magnitudes involved in the comparison are valid only for the years 1938–39 (1939–40 for the United States), their mutual relations have a significance which will last for decades.

There is a striking difference between the level of both gross and net value of agricultural output per head of agricultural labor force in the Danubian countries and in the United States. Speaking in terms of averages, a person working in agriculture created a much larger net product per year in the United States than in any of the Danubian countries. This was mainly due to the fact that in the United States a much larger area of cropland corresponds to a unit

TABLE 3.—NET PRODUCT OF AGRICULTURE PER HEAD OF AGRICULTURAL LABOR FORCE AND ITS DETERMINANTS*

Country and year	Net product of agriculture per head of agricultural labor force	Gross return per hectare of cropland[a]	Average quota of net product in agriculture	Cropland[a] per head of agricultural labor force	Gross return per head of agricultural labor force	Net product of agriculture per hectare of cropland[a]
	(*dollars at adjusted exchange rate*[b])			(*hectares*)	(*dollars at adjusted exchange rate*[b])	
Hungary (Trianon territory):						
1938/39.....	120.0	55.9	(0.682)	3.15	176.2	38.1
1939/40.....	138.9	64.8	0.682	3.14	203.8	44.2
1938/39–1939/40	129.7	60.4	0.682	3.15	190.0	41.2
Rumania:						
1938.....	57.3	36.5	0.858	1.83	66.7	31.3
1939.....	53.1	36.5	0.844	1.72	62.8	30.9
1938–39.....	55.2	36.5	0.852	1.78	64.8	31.1
Yugoslavia:						
1938.....	56.5	...	...	1.78	...	31.7
1939.....	52.7	...	...	1.77	...	29.7
1938–39.....	54.7	(43.8)[c]	(0.704)[c]	1.775	(77.9)[c]	30.7
Bulgaria:						
1938.....	52.1	48.3	0.674	1.61	77.6	32.5
1939.....	55.0	56.9	0.642	1.50	85.6	36.6
1938–39.....	53.7	52.6	0.657	1.51	81.6	34.6
United States (continental):						
1939.....	605.5	49.5	0.608	(20.10)	995.4	30.1
1940.....	611.3	51.8	0.582	20.27	1,049.7	30.2
1939–40.....	608.4	50.7	0.595	20.18	1,022.6	30.2

* Basic data for *net product of agriculture* and *gross return in agriculture* from Table 2, p. 13; for *agricultural labor force* from Table 1, p. 11; for *cropland*, Danubian countries, from Appendix Tables XX–XXIII, pp. 131–34; for *cropland*, United States, from L. A. Reuss, H. H. Wooten, and F. J. Marschner, *Inventory of Major Land Uses, 1945* (U.S. Dept. Agr. Misc. Pub. 663, 1948, processed), p. 89, and U.S. Dept. Agr., Prod. Mkt. Admin., *Agricultural Conservation Program, Statistical Survey, 1945* (1946, processed), p. 1.

[a] Cropland is defined as the sum of area sown (i.e., area harvested plus crop failure), fallow land, permanent meadows, and multiennial cultures (i.e., "orchards" according to FAO, "bush and tree crops" according to IIA). The data for cropland used relate to the crop years 1937/38 and 1938/39 (to crop years 1939 and 1940, respectively, in the United States).

[b] The exchange rates are adjusted for international purchasing-power disparity of the currencies with respect to agricultural products. They give hypothetical net and gross values of agricultural output in the Danubian countries at United States prices (the figures for the United States show actual values).

[c] The figures for Yugoslavia in parentheses are rough estimates resulting from the equation given on page 18, if one assumes that the general level of physical yields in Yugoslavia was 20 percent higher than in Rumania, that the commodity composition of agricultural production was in both countries essentially the same, and that the adjustment of the exchange rates for purchasing-power disparity of the currencies was fairly accurate. Actually the yields in quintals per hectare for 1939 were as follows: Rumania—wheat 10.9, rye 9.6, barley 7.4, oats 8.3, maize 12.3, potatoes 89.2, dry beans 5.4, sugar beets 160.2, flax fiber 4.7, hemp fiber 6.7, sunflower seed 8.7. Yugoslavia—wheat 13.1, rye 9.4, barley 10.2, oats 9.8, maize 15.1, potatoes 52.1, dry beans 8.3, sugar beets 200.0, flax fiber 8.3, hemp fiber 9.3, sunflower seed 14.3.

of agricultural labor force. Around 1939 in the United States and Bulgaria, for example, gross returns per hectare of cropland were very close together and net-product quotas in agriculture differed by no more than 10 percent, but a person working in agriculture operated nearly 13 times as much cropland in the United States as in Bulgaria, namely 20.18 hectares (1939–40 average), as against 1.56 hectares (1938–39 average). This, of course, was possible because farming was and still is far more mechanized in the United States than in the Danubian countries.

The net product of agriculture per head of agricultural labor force—"at current United States prices"—in Rumania, Yugoslavia, and Bulgaria was about at the same level: 55.2, 54.7, and 53.7 dollars, respectively (1938–39 average). The differences between these figures are so small that they may be ascribed to errors of observation and to economic and meteorologic causes of variation which are characteristic only for a given year.[8] In Hungary the achievements of farming in terms of net product per head of agricultural labor force were considerably higher than in Rumania, Yugoslavia, and Bulgaria, owing not so much to a larger gross return per hectare of cropland as to a more favorable land-labor ratio (3.15 hectares of cropland per head of agricultural labor force, as against 1.56–1.78 hectares in the other Danubian countries).

Gross return per hectare of cropland in real terms—"at current United States prices"—varied from country to country considerably, even within the smaller group of less industrialized countries, namely Rumania, Yugoslavia, and Bulgaria, in which net products per head of agricultural labor force as well as the land-labor ratios were close together. The explanation of this state of things lies in the levels of physical yields per hectare and in the commodity composition of agricultural production (product structure of agriculture), prices of agricultural products in the countries compared being assumed to be the same.[9]

[8] The difference in the concept of net product (see Appendix A, Methodological Note, p. 92) can hardly be made responsible for the differences in the data in this case. On controllable and uncontrollable causes of variations, both differences in space and changes in time, see *12*.

[9] The nationwide ratio $\frac{\text{Gross return}}{\text{Cropland}}$, which is identical with $\frac{\text{Gross value of agricultural output}}{\text{Cropland}}$ and $\frac{\text{Gross income from farming}}{\text{Cropland}}$, depends on the physical yields and on the prices of all kinds of agricultural products produced in the country.

TABLE 4.—PHYSICAL YIELDS OF CROPS GROWN ALONE*

(Quintals per hectare harvested[a])

Country and year	Wheat	Rye	Barley	Oats	Corn	Potatoes	Dry beans	Sugar beets	Flax fiber	Hemp fiber	Sunflower seed	Rice	Tomatoes
Hungary (Trianon territory)													
1938....	16.7	12.7	16.0	13.9	22.8	73.5	8.9	220.0	...	...	10.9	...	...
1939....	16.4	12.3	14.7	14.5	18.6	73.0	9.0	213.1	5.2	8.4	11.1	...	...
Rumania													
1938....	12.5	10.6	6.6	7.1	10.4	81.5	3.3	153.9	3.7	4.6	11.5	...	...
1939....	10.9	9.6	7.4	8.3	12.3	89.2	5.4	160.2	4.7	6.7	8.7	...	...
Yugoslavia													
1938....	14.2	9.0	10.1	9.0	17.3	63.9	9.0	190.7	...	...	15.1	...	...
1939....	13.1	9.4	10.2	9.8	15.1	52.1	8.3	200.0	8.3	9.3	14.3	...	...
Bulgaria													
1938....	15.4	10.0	15.8	6.2	7.6	31.8	0.7	109.7	2.2	4.1	6.2	...	...
1939....	13.7	11.3	16.5	10.2	13.9	77.6	6.8	177.4	2.6	6.3	10.0	35.0	208.5
United States													
1938....	8.9	8.7	13.0	10.8	17.5	83.3	10.4	280.2	...	...	...	...	...
1939....	9.5	6.3	11.7	10.3	18.4	81.9	10.0	264.0	5.3	10.0	...	25.4	69.5

* Data: For 1938, Hungary, *A Magyar Gazdaságkutató Intezet Gazdasági Helyzetjelentése* ([Bull. 50], 1942), p. 162; Rumania, Institutul Central de Statistică, *Anuarul Statistic al României, 1939 şi 1940* (1940), p. 418; Yugoslavia, Statistique générale d'état, *Annuaire statistique, 1940* (1941), pp. 156–69; Bulgaria, Direction générale de la statistique, *Annuaire statistique du Royaume de Bulgarie, 1940* (1940), pp. 276–77; U.S. Dept. Agr., *Agricultural Statistics, 1940*, various pages. For 1939, Internat. Inst. Agr., *International Yearbook of Agricultural Statistics, 1941–42 to 1945–46* (Rome, 1947), I, various pages; Yugoslavia, *Annuaire statistique, 1940*, pp. 156–69; Bulgaria, *Annuaire statistique du Royaume de Bulgarie, 1942* (1942), pp. 264–71; U.S. Dept. Agr., *Agricultural Statistics, 1940*, various pages.

[a] Only in the case of the United States and Hungary (*International Yearbook of Agricultural Statistics, 1941–42 to 1945–46*, I, 228) is it explicitly said in the sources that the yield figures refer to area harvested (not to areas sown). For Yugoslavia the fact has been proved by arithmetical check (data from Yugoslavia, *Annuaire statistique*). From general descriptions of the methods used by the Bulgarian Central Statistical Office it is known that quantities harvested were related to areas sown to get yields per hectare; corrections were made when devastations (crop damages by hail, floods, etc.) were too large to be ignored. It seems that Rumanian statistical agencies have proceeded in the same way (although from *International Yearbook of Agricultural Statistics, 1941–42 to 1945–46*, III, one may conclude that for 1939 Rumania had data on area harvested, which is doubtful).

Gross return per hectare of cropland was larger in Hungary and Bulgaria than in Yugoslavia and Rumania (1938–39 average: 60.4, 52.6, 43.8, and 36.5 dollars at adjusted exchange rates, respectively),[10] because physical yields per hectare in Hungary and Bulgaria were higher and because Hungary and Bulgaria produced relatively more "high-value" products. Statistical evidence for this—unfortunately incomplete as regards commodity composition of agricultural production in Hungary and especially in Yugoslavia—is provided by Tables 4, 5, 6, and 7.

TABLE 5.—PERCENTAGE DISTRIBUTION OF ARABLE LAND, BY GROUPS OF CROPS, CROP YEAR 1938/39*

Country	Cereals for grain	Food crops	Feed crops	Industrial crops	Fallow	Total
Hungary (Trianon territory)	73.6	5.8	14.1	1.9	1.8	100[a]
Rumania	83.6	3.6	5.2	3.6	4.0	100
Yugoslavia	82.6	5.6	4.7	2.7	5.0	100
Bulgaria	69.3	3.9	5.2	8.0	13.6	100
United States	58.1	2.6	26.8	11.1	...	100[b]

* Data from Internat. Inst. Agr., *International Yearbook of Agricultural Statistics, 1941–42 to 1945–46* (Rome, 1947), III, 16–17, 62–64, 124–26, 150–60; Yugoslavia, Statistique générale d'état, *Annuaire statistique, 1940* (1941), pp. 154–55.

[a] Including 2.8 percent of undistributed area.

[b] Including 1.4 percent of area for seed production.

Although it does not contain data on vegetables, fruits, and tobacco—a formal disadvantage for Bulgaria and perhaps Hungary—

[10] According to Moore (*8*, p. 35), "agricultural production" per hectare of "agricultural land" (areas under various forms of utilization converted to "arable equivalents"), 1931–35 average, amounted to 21, 17, 17, and 19 "crop units" for Hungary, Rumania, Yugoslavia, and Bulgaria, respectively. The figure for Yugoslavia here approaches that of Rumania because Yugoslavia has relatively more permanent meadows and pastures than any other Danubian country.

Following are data on gross return per hectare of *land in farms* for the accounting year 1937/38 as given in *4*, pp. 52–55:

Country	In national currency units	In dollars at adjusted exchange rates used in the present survey
Hungary	320 pengö	48.3
Rumania	5,761 lei	33.4
Bulgaria	6,513 leva	44.9
United States	20.1 dollars	20.1

In international comparisons all "per capita" figures of IIA *Farm Accountancy Statistics* should be used with caution because of differences in the statistical notion of "land in farms." This applies also to the figures cited above.

TABLE 6.—GROSS VALUE OF CROP PRODUCTION, BY GROUPS OF CROPS*

Country and harvest year	Cereals for grain	Other food and feed crops	Industrial crops, bush and tree crops	Undistributed	Total
Rumania, 1938					
(*Million lei*)	43,497	20,766	7,450	—	71,713
(*Percent of total*).	60.6	29.0	10.4	—	100
Bulgaria, 1939					
(*Million leva*)	10,357	4,154	6,952	—	21,463
(*Percent of total*).	48.3	17.2	34.5	—	100
United States, 1939					
(*Million dollars*)..	876.4	920.4	1,515.3	349.9	3,662
(*Percent of total*).	23.9	25.2	41.4	9.5	100

* Data from Rumania, Institutul Central de Statistică, *Anuarul Statistic al României, 1939 şi 1940* (1940), p. 403; Bulgaria, Direction générale de la statistique, *Annuaire statistique du Royaume de Bulgarie, 1942* (1942), p. 271; U.S. Dept. Agr., *Agricultural Statistics, 1940*, p. 544.

TABLE 7.—PERCENTAGE SHARE OF ANIMAL PRODUCTION IN GROSS RETURN PER HECTARE OF LAND IN FARMS*

Accounting year	Rumania	Bulgaria	United States (continental)
1936/37.....	24.8	37.9	...
1937/38.....	24.4	40.0	43.2
1938/39.....	25.2	40.0	...

* Data from Internat. Inst. Agr., *Farm Accountancy Statistics, 1937–38 to 1944–45* (Rome, 1946), pp. 52–54.

Table 4 gives information about the general levels of physical yields of crops per hectare: they increase in the order, Rumania, Yugoslavia, Bulgaria, Hungary.[11] This order does not correspond to the soil conditions in the Lower Danube Basin. Rumania, the Danubian

[11] Moore (*8*, p. 193) gives an index of physical yields of seven crops (wheat, rye, oats, barley, maize, potatoes, and sugar beets) per hectare sown, for the period 1931–35, as follows (not weighted by area sown):

Country	Index
Hungary	85.2
Rumania	63.0
Yugoslavia	69.7
Bulgaria	74.3
Europe	100.0

county richest in chernozem, could so far not have the full benefit of the natural fertility of her soil, mainly because she has to suffer most from lack of moisture.

Tables 5 and 6 show the distribution of the total area of arable land and of the total gross value of agricultural output by groups of crops. These data make it clear that the production of cereals, which plays a highly predominant role in Rumania and Yugoslavia, had lost ground in Hungary and especially in Bulgaria in favor of the production of "industrial crops" and "bush and tree crops." Under the prevailing systems (structures) of prices in Europe and the United States, such a substitution leads to greater gross return per hectare of cropland.

As far as one can rely on conclusions from the percentage distribution of gross return per hectare of land in farms based on the accountancy of individual farms, Table 7 shows that before the war farmers in Bulgaria transformed relatively more vegetal products into animal products than in Rumania. In a more general way this is confirmed by Table 8. Judging from the density of livestock, measured by the ratio of livestock in metabolic units (for definition of "metabolic unit" see p. 105) to cropland in hectares, it is clear that animal husbandry was quantitatively less developed in Rumania than in Hungary, Yugoslavia, and Bulgaria (the difference being greatest in cattle breeding). It seems that in these countries animal husbandry contributed to a higher gross return per hectare not only by greater input of energy (mechanical work of animals), but also by greater production of milk, meat, fat, and wool per unit of land.

If we call "intensive" ("extensive") a cultivation of land which requires more (less) labor or reproducible capital (not land) per unit of output, it should be pointed out that in each of the Danubian countries there are agrogeographic regions — mostly parts of the Hungarian Plain and the Wallachian Plain (see p. 4)—in which according to European standards extensive production of cereals prevailed. In this respect Rumania is the most typical example.

Taking into consideration only the physical yields of crops per hectare one would expect to find perhaps a smaller gross return per hectare of cropland in the United States than in the Lower Danube Basin. However, if the commodity composition of agricultural production is taken into account, such an expectation is not justified. As Table 6 shows, the relation between cereal production and production of "industrial crops," as well as of "bush and tree crops" in the United States, is the reverse of that in Rumania and probably in

TABLE 8.—DENSITY OF LIVESTOCK IN RELATION TO CROPLAND: 1939*

Country	Livestock (*1,000 metabolic units*)	Draft animals only		Cropland (*1,000 ha.*)	Livestock per ha. (*metabolic units*)	Draft animals per ha.	
		(*1,000 metabolic units*)	(*1,000 head*)			(*metabolic units*)	(*head*)
Hungary (enlarged)	5,646	4,076	3,321	7,443	.75	.54	.45
Rumania	10,371	6,996	6,487	15,486	.67	.45	.42
Yugoslavia	8,945	5,793	5,556	10,160	.88	.57	.55
Bulgaria	4,265	2,210	2,306	4,291	.99	.52	.54
Lower Danube Basin....	29,227	19,075	17,670	37,380	.78	.51	.47

* Data from Appendix Tables XIII, XX–XXIII, pp. 124, 131–34. Livestock includes horses, mules, cattle, buffaloes, sheep, and pigs.

Yugoslavia. The United States produces relatively less of those products in the production of which she obtains lower physical yields per hectare (e.g., wheat) and relatively more of those products of which the physical yields are higher (e.g., sugar beets).[12]

Viewed from the standpoint of the United States, the advantages in the commodity composition of agricultural production seem to be sufficient to offset the disadvantages in the physical yields of crops (if the United States is compared with Rumania and Yugoslavia, not with Hungary and Bulgaria).

Summing up the results of the analysis of net-product formation in agriculture in the Lower Danube Basin around 1939, one may say that larger gross returns per hectare of cropland, combined with more cropland per head of agricultural labor force, led to larger net product per head of agicultural labor force in Hungary, while in the less industrialized countries—Rumania, Yugoslavia, and Bulgaria—the considerable differences in gross return per hectare were offset by differences in the average quota of net product and in the area of cropland per head of labor force (thus net product of agriculture per head of agricultural labor force was in these three countries at the same general level).

As the average (total) quota of net product plays an important role in the explanation of levels of net product, it seems necessary to dwell for a while upon this point.

The net-product quota is defined as the ratio,

$$\frac{\text{Net product}}{\text{Gross return}} = 1 - \frac{\text{User cost}}{\text{Gross return}}.$$

Obviously the net-product quota depends first on factors which affect gross return but do not affect user cost at all or not in the same proportion, and second on factors which affect user cost without affecting gross return.[13]

In terms of macroeconomics, i.e., of nationwide data, the average quota of net product in agriculture is determined by: (*a*) the rela-

[12] Shares in the total gross value of agricultural output in 1938: United States—wheat 11.5 percent, sugar beets 1.5 percent; Rumania—wheat 27.3 percent, sugar beets 0.8 percent.

[13] *User cost* is defined as value of materials (feed, seed, fuel, and plant nutrients, namely commercial fertilizers, manure, water) and energy (animal work and electricity) consumed in the process of production (as far as supplied by other production enterprises or taken from own stocks), expenditures for services of other productive enterprises, depreciation (allowances for wearing out and obsolescence) of real capital and insurance of real capital.

tion between prices of agricultural products (affecting gross return) and prices of nonagricultural products (affecting user cost); (*b*) the coefficients of production in agriculture (for all means of production); (*c*) the vertical integration (division) of agricultural production, in other words, the combination (separation) of successive stages of production, i.e., whether farmers buy or produce fodder and seed, whether they sell or buy milk for production of butter and cheese, and so on; (*d*) the commodity composition of agricultural production at a given stage of production; (*e*) the capital intensity of production measured in comparable value per unit of cropland; and (*f*) last but not least, the natural conditions of agricultural production, i.e., the natural fertility of the soil and the climate.

Let us take as an example the determination of the net-product quota in agriculture in Rumania and Bulgaria. Since there are no appropriate data to compare the price systems (price structures) and the coefficients of production of the Danubian countries, we must confine the comparison to the remaining factors—(*c*), (*d*), (*e*), and (*f*).

Average user cost—per unit of agricultural output, as well as per unit of cropland—is higher, and therefore the average net-product quota in agriculture is lower, in Bulgaria than in Rumania[14] because Bulgarian agriculture is less integrated than Rumanian agriculture and the percentage of farms not producing cereals is larger in Bulgaria than in Rumania (relatively more farmers buy feed and seed in Bulgaria than in Rumania—in that respect tobacco production in Bulgaria plays an important role); because more capital in the form of livestock, buildings, machines, and irrigation equipment is invested per unit of cropland in Bulgaria than in Rumania;[15] and,

[14] According to Table 3 (see above, p. 19), .657 in Bulgaria, as against .852 in Rumania (1938–39 average). Moore (*8*, p. 51) estimates the net-product quota in agriculture in Albania, Bulgaria, Greece, Turkey, and the USSR at .95. But such a high figure cannot be obtained in "settled agriculture." It is possible only for "nomadic livestock production" and maybe for olive farms (in some Mediterranian regions).

[15] *Farm Accountancy Statistics* (*4*) gives the following figures on depreciation charges (of fixed real capital) per hectare of "land on farms" (converted to dollars of "equal" purchasing power with respect to agricultural products for the purpose of the present survey):

Accounting year	Hungary	Rumania	Bulgaria
1937/38.....	44.2	17.6	86.7
1938/39.....	...	14.2	67.8

These figures are not strictly comparable in space because of differences in the notion of land in farms to which the depreciation charges are related.

finally, because soils of high natural fertility are of greater extent in Rumania than in Bulgaria.

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CHAPTER 3

ORGANIZATION OF AGRICULTURE: AGRARIAN REFORMS

INTRODUCTORY REMARKS

During the last thirty years the organization of agriculture in the Danubian countries has undergone many changes which are phases of one and the same process, deeply rooted in the economic and demographic development of all Eastern Europe and accompanied by dramatic political events. This process manifests itself—though not simultaneously in all parts of the area—in the liberation of the peasants from serfdom during the nineteenth century; in the abolition of coercive labor and in the redistributions of farmland during the first half of the twentieth century; and, finally, in the socialization of agriculture which has been taking place since 1948.

The changes to be described are so complicated that it is impossible to understand them without a discussion of the concept on which the analysis is based—namely, the concept of system of land exploitation.

The organization of agriculture results from the land exploitation system (the "rural order") and the scale of agricultural production. The two determinants of the organization of agriculture are usually, but not necessarily, connected with each other. The scale of production can be seen from the distribution of farmland by size of farms. A system of land exploitation may be described in two different ways: (*a*) according to the fusion or separation of the production-factor functions; or (*b*) according to the variations within the land-property system, the land-tenure system, and the labor conditions in agriculture. It follows that any land exploitation system deals not only with the rights in land (possession, inheritance, alienation, and destruction), but also with the rights with respect to the products of land.

Fixed real capital (including land), entrepreneurial activity, and labor are the most important factors of production (broad groups of means of production) in agriculture. The services of capital are represented by the ownership of land and of other material means of production. The entrepreneurial services are what is called *use of land*, while the services of labor take the form of either *farm management*

or *work on land.* Thus we come to four production-factor functions with respect to land—namely, to the functions of *farm owner* ("landlord" or "lessor" in the case of tenancy), *landholder* or *cultivator*, the bearer of the production risk ("tenant" or "lessee" in the case of tenancy), *farm operator*,[1] which corresponds to "farmer" in the usual sense, and *tiller of the soil.* All production-factor functions, except of course that of "tiller of the soil," can be performed either by individuals (natural persons) or by corporations (juristic persons) or even by public bodies. Since there are many ways in which the production-factor functions may be united in one factor subject, and since there are many kinds of production-factor subjects, a large number of land exploitation systems is possible. Most of them actually did come into existence at different times in the Lower Danube Basin.

When the land belongs to those individuals who till it, the land exploitation system is *direct*; in such a case all production-factor functions—"landowner," "landholder," "farm operator," and "tiller of the soil"—coincide (e.g., family farm) or at least the functions "landowner" and "tiller of the soil" are necessarily united in one and the same natural person (e.g., co-operative farm for joint cultivation of land owned by the co-operative or by its members). The direct exploitation of the land has been the ideal of the peasants in the Danubian countries for centuries. It was realized—for the peasantry as a whole—first in Serbia and then in Bulgaria after the liberation of these countries from Turkish rule (*de facto*: uprising at Takovo in 1815 and Russo-Turkish War in 1877–78, respectively); later in Rumania and the rest of Yugoslavia (*de jure*: agrarian reforms of World War I in 1918 and 1919, respectively); and finally in Hungary (*de jure*: agrarian reform after World War II in 1945). It is the tragic destiny of the peasantry in the Lower Danube Basin that the system of direct land exploitation was bound to last a relatively short time; in Hungary it even died before it was born. Since 1948 in all Danubian countries the family farm is being replaced more and more by the artel (a type of kolkhoz) or by the state farm. The direct land exploitation was thus preceded and is now followed by different systems of indirect land exploitation.

The last hundred years in the economic history of the Danubian

[1] Accordingly, a "farm operator" can be an "independent farmer"—if he is at the same time farm owner, usufructor without recompense, or tenant—or a "dependent farmer," i.e., a manager of a private, public, or ecclesiastic farm. On this principle of division rests also the classification of the American official statistics (see *1*, Tables 679–83, pp. 571 ff.).

countries show a remarkable rise and decline of peasantry freedom. The governmental measures which produced, so to speak, a complete cycle in the social status and the economic position of the peasants came in four waves. They can be summarized as follows:

1. *Political and agrarian reforms under foreign and national rule during the nineteenth century.*—Liberation of the peasants from serfdom in the Lower Danube Basin except in Bosnia and Herzegovina (*de jure* liberations 1848–64; *de facto* liberations 1815–1912).

2. *Agrarian reforms after World War I (1918–24).*—Abolition of serf labor in Bosnia and Herzegovina (Yugoslavia); abolition of colonate in Dalmatia (Yugoslavia); abolition of coercive labor in Rumania; redistribution of farmland in all four Danubian countries —expropriation of latifundia in Rumania and Yugoslavia, and of all classes of large land properties in Bulgaria.

3. *Agrarian reforms after World War II (1945–46).*—Adoption of direct land exploitation as principal system of land exploitation in Hungary; redistribution of farmland in all four Danubian countries —expropriation of all classes of large land properties in Hungary, Rumania, and Yugoslavia.

4. *Socialization of agriculture (since 1948).*—Introduction of collective farming or, more precisely, of corporative farming based on authoritative act in all four Danubian countries.

LIBERATION OF THE PEASANTS FROM SERFDOM

Of decisive importance for the time and mode of the liberation was the fact that the Danubian countries were governed or dominated during the nineteenth century by three empires: Austria-Hungary, the Ottoman Empire (Turkey), and Russia. The political destiny and the whole institutional framework of these huge states influenced the social and economic conditions in their provinces and protectorates. This allows one to speak in more general terms about the development of the land exploitation system in the Lower Danube Basin during that time. We have then to consider only three more homogeneous parts of the area, namely:

1. countries and provinces under Austro-Hungarian rule—Hungary with Croatia-Slavonia, Transylvania, Baranya, Bachka, and Banat, as well as the Austrian provinces of Carniola or Krain (core of present Slovenia), Dalmatia, and Bukovina;
2. countries and provinces under Turkish rule—Bulgaria (with Northern and Southern Dobruja until 1878), Serbia, Macedonia, Montenegro, Bosnia, and Herzegovina;

3. provinces under Russian influence—Wallachia (Muntenia) and Moldavia (from the Treaty of Kuchuk Kainarji in 1774 to the Crimean War in 1854); or under Russian rule—Bessarabia (from 1812 to 1917).

Serfdom is a hereditary social and economic status of the tillers of the soil by virtue of written or customary law. It exists when all of the following conditions are fulfilled: the tillers of the soil do not own the land they work; they are obliged to work on the land they hold, which implies that they cannot change their occupation or their residence without the consent of their master (the landlord); they owe *corvée*,[2] i.e., they are obliged to work without remuneration on land they do not hold; they owe payments in kind (deliveries of products from their farms) or in money as land tax (or tribute) and rent. Intrinsic in the concept of both serfdom and liberation from serfdom are two things: that the serfs are "*tied to the glebe*" (*glebae adscripti*) and that they *owe corvée*. It should be observed that the serfs had not only the obligation but also the right to cultivate the land they held. Under certain conditions—great scarcity of fertile land, severe restrictions on utilization of arable land, lack of possibility for emigration or employment outside of agriculture—serfdom could exist even when the serfs were personally free and, therefore, were allowed to abandon land and master (the labor servitude was vested in the land).

In the development of *serf farming* in Europe, two stages have been observed, namely *serf tenancy* or *Grundherrschaft* (twelfth to eighteenth centuries) and *serf labor* or *Gutsherrschaft* (eighth to nineteenth centuries).[3] These stages were passed in the various areas at different times and in different sequence. The terminology suggested here differs in its meaning from the German terminology because it looks at the relationship of serfdom from below, instead of from above. The term "manorial system," commonly used in English literature, has a very broad meaning: it covers all forms of Gutsherrschaft and some forms of Grundherrschaft.[4]

[2] "Week work" (*wicweorc*) in England, *Frone* or *Fronarbeit* in Germany, *robot* in Austria-Hungary, *kuluk* or *angaria* in the Ottoman Empire, *clácă* in Rumania, *beglučenje* in Bosnia and Herzegovina, *corvée* in France.

[3] *Obrochnaia systema* and *Barshchinaia systema* in Russia before 1861.

[4] There is essential difference between the Old Manor (*villikation*), i.e., the manor which is characteristic for medieval England (at its height in the thirteenth century) and the Gutsherrschaft in the narrow sense, i.e., the Gutsherrschaft which developed in Germany, especially east of Elbe, during the fifteenth to eighteenth centuries. The difference between the two systems of land exploitation amounts to the

Important for the distinction between the two systems of land exploitation is whether or not the landlord cultivates land, that is to say, whether in addition to being a lessor he is also an entrepreneur, operating his farm in person or through a manager.

In the case of serf tenancy one has to deal with a group of separate agricultural enterprises—tenant farms with a common landlord. The landlord has no farm, though there may be a farmyard where his share in the harvest is delivered by the serfs. Corvées are restricted to personal and household services or consist of work on buildings and roads.

In the case of serf labor one large agricultural enterprise embraces the large farm of the landlord and the small or dwarf farms of the serfs. Corvées of all kinds, especially work in the fields, play an important role: the serf is more laborer than tenant ("tenant laborer").

For centuries serf farming was the economic basis of feudalism. Feudal lords were the masters of the bonded peasants. However, serf farming outlived feudalism. The history of Germany and Austria-Hungary in Western Europe as well as of the Ottoman Empire and Russia in Eastern Europe shows that in the state edifice the upper structure may change while the foundation remains unaffected for a long time. Military, financial, and agricultural organizations are interrelated in such a manner that each one of these three social factors can determine or be determined by the two others. After the eighteenth century at the latest, the landlords were no longer representatives of a feudal order. Although they still formed an upper class of society, they were only capitalists or entrepreneurs. This was the era of "seignorial" agriculture, remnants of which still may be found in Europe.

In the countries and provinces under Austro-Hungarian rule on the eve of the liberation of the peasants, serf labor was the prevailing system of land exploitation. It was especially strongly developed in Carniola (Krain) and Bukovina.[5] Although from the time of Maria

fact that in the first case the income of the landlord from his farm was smaller than his income from the leasehold (because the "demesne land" was smaller than the total area of the "virgates"), whereas in the second case the income proportion was the reverse. On this subject see *2*, pp. 649 ff.; *3*, pp. 402 ff.; *4*, pp. 458 ff.; *5*, pp. 719 ff.; *6*, pp. 590 ff.; *7*, pp. 576 ff.; *8*, pp. 100 ff.; *9*, pp. 87 ff.; *10*, pp. 11–14, 16–18, 46–49, 55.

[5] In Hungary proper the evolution of the so-called "*jobbágy* system" represents the most important changes in the social and economic status of the peasants up to 1848. During the period 1514–56 the *jobbágys* were serfs in the full sense of the word. After 1556 they were tenants owing corvée, yet free to move (see *11*, pp. 2, 32, 40; *12*, pp. 17, 19, 286).

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Library, Supreme Court, Tara Khamba, Rd.
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Theresia the policy of the monarchs who promoted enlightened absolutism was to improve the living conditions of the peasants and to reduce the political power of the landed aristocracy, it was not until 1848 that serfdom was abolished. The revolutionary wave which swept over Europe led to peasant revolts in Bukovina and Galicia, and helped to break the opposition of the landlords to agrarian reforms. Proclaimed free from all bondages of serfdom, the peasants became owners of the land they held upon payment of indemnities to the former landlords. In southern Dalmatia—more precisely in the territory of the ancient republic of Dubrovnik (Ragusa), which was exempted from the peasant-liberation legislation of 1848–49—serfdom was abolished later, in 1878 (*13*, p. 276). On the other hand, there was a belt of territory along the Turkish-Austro-Hungarian border in which peasants were free from the end of the sixteenth century. This belt—called "the Military Frontier"—extended from the Adriatic coast through Croatia-Slavonia and Banat to the southern Carpathians.

In Rumelia, or Rumily, as the European provinces of the Ottoman Empire were officially called, land-property system, land tenure, and labor conditions at the beginning of the nineteenth century presented a very complicated picture. There were to be distinguished five categories of land, as follows:[6]

Private property

Mulk—private land properties in fee simple, given to Moslems on payment of tithe (dime) or to infidels upon payment of tribute

Ecclesiastic property

Mevkufé—lands owned by mosques and other establishments of the Moslem Institution (public or private endowments, *vakufs*)

State property

Mirié—lands given to Moslems and infidels in hereditary leasehold for cultivation. (*Mirié* lands should not be confused with *mera* which designates common pasture—around any village or town. The *mera* lands belonged to the category *metruké*.)

Metruké—lands used in common, mainly pastures, forests, and roads (public domain)

Mevat—land not in use (public domain)

[6] According to A. H. Lybyer (*14*, pp. 28 ff.), in the sixteenth century only three categories of land were distinguished, namely: *state lands* (*ersi memleket*), from which fiefs were given to Moslems and endowments were made to mosques; *tithe lands* (*ersi usheriyeh*), mulk of Moslems; and *tribute lands* (*ersi kharajiyeh*), mulk of infidels. Joseph von Hammer, an authoritative source in that field of research, gives the same classification in *15*.

Among these five categories of land, the mirié lands were most important from economic, political, and social points of view. They comprised only cropland and were the capital basis of Turkish feudalism (*15*, pp. 339 ff.; *16*, pp. 32, 358; *17*, p. 141; *18*, p. 17).

In contrast to some of the provinces of the old conquest, such as Arabia, Egypt, Mesopotamia, and Syria, private land (mulk) did not play an important role in Rumelia. According to the Moslem canon law based on the Koran the Sultan, i.e., the State, had the eminent domain on mirié lands (*19*, p. 499; see *20*, pp. 767 ff.; *21*, p. 43). Since the Sultan was also Imam, i.e., head of the Moslem Institution, the mevkufé lands were also under his dominium. In Rumelia state-lands (mirié, metruké, mevat) and ecclesiastic domains (mevkufé) occupied about three-fourths of the state territory, according to E. Engelhardt (*22*, Vol. 2, p. 56). The statement relates apparently to the beginning of the nineteenth century.

Originally serf farming took the form of serf tenancy in the frame of feudalism. The Sultan gave military fiefs (*timars*) on mirié lands to Moslems. Since the *timariots* had the obligation to go to war as *spahis* (horse soldiers—not to be confused with the paid spahis, regular cavalry, of the Turkish army at that time; the Turks pronounce it "sipahi"), the fief was called *spahilik* and the whole timar organization the "spahilik system."

Opinions differ as to whether the timar was a grant of land (*20*, p. 767; *16*, p. 32) or a grant of income from land (*18*, pp. 17 ff.). Whichever of these two opinions is right, the spahis were direct vassals of the Sultan and the peasants working the timar lands were serf tenants tied to the glebe.[7] On May 29, 1826, two weeks before the destruction of the corps of Janizary, Sultan Mahmud II abolished the spahilik system as a military and financial organization. After that no more timars were given and the government established the practice of selling to entrepreneurs the right to collect the dime (the tithe) from the farmers within an administrative unit. According to A. Urošević (*23*, p. 820), in Macedonia the selling of the right to collect the dime was not introduced until 1839.

However, the abolition of feudalism in the Ottoman Empire did not mean liberation of the peasants from serfdom in Rumelia. Even before the reform of Mahmud II, during the eighteenth century and earlier the spahis tried to convert their fiefs into *de facto* ownership

[7] Turkish feudalism differs in many respects from West European feudalism. The spahis did not form a social class so stable and privileged as the feudal lords in Germany, England, or France. They had no judicial or legislative powers. The right of inheritance was more limited and was abolished by Sultan Selim III in 1800.

and started to treat the peasants on the fief lands as their laborers (*13*, p. 82; *16*, pp. 32 ff., 313, 360). The reform of 1826 rather favored this change in the relationship between landlords and peasants (*22*, Vol. 1, p. 209; Vol. 2, pp. 50, 56, 306).

In the course of the nineteenth century the gradual penetration of money economy into Southeastern Europe stimulated large-scale production in agriculture and accelerated the transition from feudalism to private capitalism. The military-economic spahilik system left the field to the economic tchiflik system, and serf tenancy, existing *de jure*, developed into serf labor, existing *de facto*. In agriculture the Moslems were owners either of large agricultural enterprises called *tchifliks* or, as peasants, of family farms (*24*, pp. 48 ff.; *18*, p. 47). The infidels, the Christians, were tenant laborers (serfs or contract tenants), or contract laborers on the tchifliks, or farm owners (mainly in the mountainous districts). On the meaning of the term "tchiflik" see Appendix B, page 95.

The problem of serfdom in the Ottoman Empire cannot be discussed without mention of the *Tanzimat* ("beneficent legislation"), i.e., those governmental measures issued from the enthronement of Abdul Mejid in 1839 to 1880,[8] which aimed at consolidating the Empire by abolishing the differences in the social and economic status of Moslems and infidels. The Tanzimat failed to achieve its aims, because of the passive resistance of the Moslem Institution and the Turkish administration. A close examination of the imperial rescripts Hatti Sherif of Gülhané (November 3, 1839) and Hatti Humayun (February 18, 1856) shows that these two most important acts of the Tanzimat epoch had no bearing on serf farming (see Appendix B).

Both during and after the epoch of the Tanzimat, the serfs were *de jure* not tied to the glebe; they were indeed personally free. However, since it was impossible for them to obtain land from the state or from the municipalities, serfs were concerned more over the danger of being chased off the land they held than over their right to move. Owing to the weakness of the government there were regions and times in which influential Moslems forced the free Christian peasants to sell to them their lands and to become tenant laborers. There were, of course, cases—though very rare—in which tchifliks were established by uncoercive purchases of mulk lands. Thus there were three

[8] This legislation was undertaken as a result of pressure exerted by the Great Powers, especially strong after the Crimean War in 1856. It terminated when Abdul Hamid II turned to absolute rule in 1880.

ways in which tchifliks came into being: by usurpation of spahiliks (mirié land), by usurpation of land properties of free Christian peasants (mulk land), and by private agreement (mulk land) (*16*, p. 33; *23*, p. 822; *24*, pp. 54 ff.).

In the countries and provinces under Turkish rule, serfdom was not abolished by any legal act; it disappeared *de facto*. The peasant serfs achieved economic freedom and social equality with the political liberation from the Turks: first in Serbia, after the uprising of Takovo in 1815; then in Bulgaria, after the Russo-Turkish War of 1877–78; and finally in Macedonia, after the First Balkan War in 1912. The development in Bosnia and Herzegovina provides an exception, as is explained below.

Although Wallachia and Moldavia, the two principalities which later formed the Kingdom of Rumania, were at least for one century and a half under direct Turkish domination (from the fall of Constantine Brancovan in 1714 to the union of the principalities in 1862), they are treated here not as a part of former Rumelia, because in the time which was decisive for the development of their social and economic structure they were under strong Russian influence.

The strange thing about serfdom in Rumania is that it began much later and was in some respects less severe, and in others more, than the serfdom in the other parts of the Lower Danube Basin; moreover, it had very little to do with the elaborate hierarchy of a feudal empire.[9] This was due to the loose contact of the territories east of the Carpathians and north of the Danube with the German-Hungarian and the Byzantine-Turkish world during the Middle Ages.

According to the prevailing opinion, the Rumanian peasants in the thirteenth and fourteenth centuries were still free, while the peasants in the surrounding counties were, in the majority, already serfs (*27*, pp. 4, 6). In villages the *cnez* (from the Slavic *kniaz*, meaning "prince"), also called *judeţ* (from the Latin *judex*), had administrative functions, in earlier times (eleventh to twelfth centuries) as head of a self-governing unit, and later (twelfth to thirteenth centuries) as representative of the ruler of the country (*28*, pp. 5, 11). In spite of the fact that they collected the dime and led the men of their *judeţies* in war, the Rumanian cnezi and judeţi cannot be considered as corresponding to the Turkish spahis: they were not feuda-

[9] According to G. N. Leon (*25*), "*rumâni* or *vecini* . . . were serfs with or without land, owing service without limit; they could be sold with or without the estate on which they lived, but serfdom did not include their women and children" (see also *26*, p. 597).

tories but clan leaders who possessed one or more shares in the land of the community, collected the dime for the ruler (and only partially for themselves), and had judicial powers (*27*, p. 6).

Serfdom made its appearance in Wallachia and Moldavia—upon the evidence of historical documents—in the course of the fifteenth and sixteenth centuries, after the formation of the *boyar* class out of the cnezi and the foundation of the principalities (*voivodats*). One class of peasants, called *rumani* in Wallachia and *vecini* in Moldavia, were not entitled to own land and were obliged to work on the lands of the free peasants (*moşneni* in Wallachia and *răzesi* in Moldavia) and on the lands of the boyars. There was also a third class of peasants, the free tenants (*slobozi, laturaşi*, or *domneşti* in Wallachia; *plungari* in Moldavia), who were personally free but had no land of their own (*27*, p. 7; on terminology see *25*, p. 6; *26*, pp. 595 ff.; *29*, pp. 4 ff.; *27*, pp. 7, 13). The seventeenth century brought a great change in the agrarian relations in the Rumanian principalities. In 1600 the Wallachian voivode Mihai Viteazu (Mihael the Brave) bonded the free tenants to the glebe (*30*, p. 334). In 1644 Vasile Lupul did the same in Moldavia (*26*, p. 596). Since the boyars furthermore increased the labor servitudes (*clăcă* or corvée) of the unfree peasants, the transition from serf tenancy to serf labor was thus completed.

By the beginning of the eighteenth century most of the Rumanian peasants were rumani or vecini, i.e., serfs (*28*, p. 16; *26*, p. 597). A mild improvement in the conditions of serfdom was brought about by the reform instituted by Constantin Mavrocordato in 1746 in Wallachia and in 1749 in Moldavia. Mavrocordato was a prince of Greek origin nominated by the Sultan during the Phanariote period in Rumanian history (1714–74). The laws issued during the rule of Mavrocordato introduced the *Urbarial System* (already existing in Western Europe): they codified and fixed the obligations of the serfs. The most important element of Mavrocordato's reform was the provision that a serf had the right to purchase his freedom but not the land he held (*26*, p. 597; *27*, p. 17). This could hardly be considered abolition of serfdom—this statement disagrees with the opinion expressed by Mitrany (*28*, p. 16), H. L. Roberts (*31*, p. 8), and Alexander Manuila (*30*, p. 334).

After the signing of the Treaty of Adrianople, which ended the Russo-Turkish War of 1829, Rumania was occupied for five years (through 1833) by Russian military forces. Under the supervision of General Kisselev, commander of the occupation army, a self-gov-

ernment was established. It was enacted by the so-called *Organic Statutes* of the two principalities (voted by the Wallachian Divan on June 1, 1831 and by the Moldavian Divan on January 1, 1832). The Organic Statutes gave an oligarchic character to the government. The destiny of the Rumanian peasants was now placed in the hands of the boyars, their landlords.

By the provisions of the Organic Statutes dealing with the land exploitation system, the landlords were declared *de jure* owners of one-third of the lands they controlled (*26*, p. 598; *28*, pp. 27 ff.). In spite of the fact that they held to the principle of personal freedom, the Organic Statutes had an unfavorable effect upon the development of the agrarian relations in Rumania. In the minds of the peasants—recalling the origin of the Rumanian tenure system—ownership of the large landed estates was a right commonly or jointly possessed by boyars and unfree peasants, "landlords" and "tenants"; both sides, according to that, had usufruct, the usufruct of the peasants being reduced by their obligations to the boyars. Destroying this conception, the Organic Statutes strengthened the position of the landlords and contributed to the delay of the final settlement of the problem of serfdom in Rumania by almost a century (until 1918).

In 1864 Alexander Cuza, the first native prince of the already united principalities Wallachia and Moldavia, had to dissolve the National Assembly in order to overcome the opposition of the landlords to his project for a new rural order. After this *coup d'état*, Cuza decreed that all peasant servitudes should be abolished, and that all land exceeding one-third of the area of any single estate with labor servitudes should be distributed among former corvée peasants in freehold (*30*, p. 334; *29*, p. 8). The reform of 1864 did not convert all serfs into landowners.[10] Yet it may be said that in Rumania serfdom was abolished after an independent state was *de facto* established.

From 1856 (Crimean War—Treaty of Paris) to 1878 (Russo-Turkish War—Congress of Berlin) southern Bessarabia belonged to Rumania (Moldavia), and after World War I the whole of Bessarabia became a part of Great Rumania. In June 1940 the entire province was annexed by the USSR and then, in June 1941, was occupied by Rumania. Since the end of World War II Bessarabia has been incorporated in the USSR (*32*, pp. 607–13).

[10] The number of beneficiaries (households) was approximately 400,000. There were around 100,000 free-peasant households before the reform (see *26*, p. 6).

AGRARIAN REFORMS AFTER WORLD WAR I

The wars of the second decade of the twentieth century—more precisely the Balkan War I (1912) and World War I (1914–18)—ended with the defeat of the three eastern European empires: Austria-Hungary, Russia, and Turkey. As a consequence, two new states, Yugoslavia and Great Rumania, were formed out of "pieces" belonging to the former empires; Great Hungary was reduced to Trianon Hungary ("dismembered Hungary"), and the frontiers of Bulgaria underwent changes that almost offset each other. After the war a wave of agrarian reforms passed over all four Danubian countries. Although the deep causes leading to the reforms were of an economic nature, the motives of the reform initiators were purely political. The slogan "The land belongs to those who till it" was rightly chosen, but it was chosen for reasons other than the conviction that the direct land exploitation would yield a larger agricultural output. The new states of Yugoslavia and Great Rumania could be consolidated only with the support of a free and contented peasantry. In Hungary and Bulgaria, social unrest followed the military defeat and imposed the land property question upon the programs of the political parties.

Table 9 may be used to obtain an idea of the possibilities of establishing direct land exploitation by redistribution of land before World War I. Appendix Table V, page 113, on the other hand, shows what actually was achieved. It should be observed that in Table 9—in two cases—farms are substituted for land properties, and that postwar data are used for Yugoslavia. This deficiency of the statistical documentation was unavoidable, because complete data on land property—for Hungary before 1935 and for the components of Yugoslavia up to the present—do not exist. To infer the distribution of rural-property land from the distribution of farmland is possible here since the *interclass* lease of land did not play an important role in Hungary and Yugoslavia (except in Bosnia, Herzegovina, and northern Dalmatia before 1919).

In *Hungary* and *Rumania* almost half, more precisely 44 percent, of the agricultural land (i.e., of cropland and pastures, including all forests in the Rumanian provinces of Transylvania, Bukovina, and Bessarabia) was in large properties. In Hungary the reform of 1920 affected only 5 percent of the agricultural land, while in Rumania the land distributed to farmers by virtue of the reform of 1918 represented 21 percent of the agricultural land. Believing in "agricultural capitalism" in a technical sense, i.e., in the necessity of great investments in agriculture—which was right—the promoters of the Hun-

TABLE 9.—RURAL-PROPERTY LAND OR FARMLAND IN THE LOWER DANUBE BASIN BEFORE WORLD WAR I: DISTRIBUTION BY SIZE OF PROPERTIES OR FARMS*

Class of properties or farms (*hectares*)	Kingdom of Hungary[a] 1895 (farms)	Old Kingdom of Rumania 1896—1902–05, Transylvania 1916, Bukovina and Bessarabia around 1918 (properties[c])	Yugoslavia[b] 1931 (farms)	Bulgaria 1908 (properties[d])
		(*Thousand hectares*)		
Under 5[e]	3,149	8,119	2,981	652
5–10[f]	3,105		2,873	1,117
10–50[g]	4,848	3,330	3,769	2,029[h]
50–100[i]	808		338	—[h]
100 and over[j]	9,300	9,045	684	—[h]
Total	21,210	20,494	10,645	3,798
		(*Percent*)		
Under 5[e]	14.8	39.6	28.0	17.2
5–10[f]	14.6		27.0	29.4
10–50[g]	22.9	16.3	35.4	53.4[h]
50–100[i]	3.8		3.2	—[h]
100 and over[j]	43.9	44.1	6.4	—[h]

* Data from Hungary, Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Évkönyv, 1915* (1918), p. 69; Rumania, Ministerul Industrei şi Comerţului, *Anuarul Statistic al României, 1909* (1909), p. 215; David Mitrany, "The Land and the Peasant in Rumania: The War and Agrarian Reform [1917–21]," *Economic and Social History of the World War, Rumanian Series* (London, New Haven, 1930), pp. 202, 204, 210; Rumania, Direcţiunea Generală a Statisticei, *Buletinul Statistic al României*, Seria 4, 1919, No. 2, p. 324; Yugoslavia, Statistique générale d'état, *Annuaire statistique, 1936* (1937), pp. 86 ff.; S. D. Sagoroff [Zagoroff], "Die Grundbesitzverhältnisse in Bulgarien," in J. S. Molloff, *Die sozialökonomische Struktur der bulgarischen Landwirtschaft* (Internat. Conf. Agr. Econ., Berlin, 1936), p. 90.

[a] Excluding Croatia-Slavonia, including Transylvania (overlapping with Great Rumania), as well as Baranya, Bachka, and Banat (overlapping with Yugoslavia and Great Rumania).

[b] Interwar.

[c] Composition as to kinds of properties and kinds of land explained in the sources.

[d] Local private properties only, i.e., excluding plots of proprietors living outside of the respective municipality.

[e] Hungary 5.7.

[f] Hungary 5.7–11.5.

[g] Hungary 11.5–57.

[h] In the statistical sources given as "10 hectares and over." The higher-bracket groups assumed here to be empty, the number of properties over 50 hectares being actually very small.

[i] Hungary 57–115.

[j] Hungary 115 and over.

garian land reform of 1920 purposely limited its scope—which was wrong. The social order on which this policy rested could endure because of the respect the Hungarian people, both peasants and landlords, had for authority—a respect born in feudalism and maintained

by religion (Catholicism). In Rumania, where social relations were less formal and religious institutions more liberal (National Orthodox Church), the respect for authority was not so strong and social tension grew more easily; in 1907 a peasant revolt broke out.

In *Bulgaria* direct land exploitation was already by far the predominant system. There was not much left to be done; the agrarian reforms of 1921 and 1924—as applied in the course of twenty years—affected 6 percent of the agricultural land.

Yugoslavia, owing to her mixed agrarian structure, took an intermediate position. Large land properties occupied around 20 percent of the land in farms. The Yugoslav land reform of 1919 went—at the national, not at the provincial level—a little further than the Hungarian land reform of 1920 and the Bulgarian land reforms of 1921 and 1924. The land distributed to farmers amounted to 12 percent of the agricultural land.

Because of their greater significance in both economic and social aspects, the Rumanian and the Yugoslav reforms deserve special attention.

As Table 9 and Appendix Table I show, the distribution of rural-property land in *Rumania* before the reform of 1918 was characterized by a clearly expressed dichotomy. In all provinces large properties (100 hectares and over) and small and dwarf properties (under 10 hectares) formed a U-shaped curve, i.e., two large groups with a similar group of medium-sized properties in between.

The relation of the distribution of rural-property land by size of properties to the distribution of farmland by size of farms—as can be seen from Table 10, containing data only for the Old Kingdom—

TABLE 10.—RURAL PROPERTIES AND FARMLAND IN RUMANIA, 1896–1913*

Class (*hectares*)	Rural properties[a] 1896—1902–09		Farmland 1913	
	(*1,000 ha.*)	(*percent*)	(*1,000 ha.*)	(*percent*)
Under 10	3,154	40.3	3,236	55.4
10–100	862	11.0	922	15.8
100 and over	3,811	48.7	1,682	28.8
Total	7,827	100.0	5,840	100.0

* Data from Rumania, Ministerul Industrei şi Comerţului, *Anuarul Statistic al României, 1909*, p. 215, and *1915–1916* (1919), pp. 50 ff.; David Mitrany, "The Land and the Peasant in Rumania: The War and Agrarian Reform [1917–21]," *Economic and Social History of the World War, Rumanian Series* (London, New Haven, 1930), pp. 202, 204.

[a] Public, private, and ecclesiastic properties on agricultural land excluding vineyards and prune orchards.

reveals the system of land exploitation after the liberation of the Rumanian peasantry in 1864. Labor for the large estates was supplied to a considerable extent by tenant laborers on a contract basis. In 1913 in the Old Kingdom—Wallachia, Moldavia, and Northern Dobruja—1,079,535 out of 1,133,202 farms had less than 10 hectares; in other words, 95.3 percent of the farms were dwarf, small, and low-middle-sized farms. The farms with less than 10 hectares of farmland occupied an area of 3,236,000 hectares (or 55.4 percent of all farmland). One-third of that area—1,122,000 hectares—was land taken on lease. There is no statistical indication as to where this land came from. However, rural property censuses of 1896, 1905, and 1927 show that owners of land properties under 10 hectares let out very little land.

The contracts of the tenant laborers in the Old Kingdom during the period 1865–1917 had serfdom clauses (e.g., corvée). Therefore the system of land exploitation prevailing at that time can be called "coercive labor." We are justified in applying the terms "coercive labor" and "coercive tenancy"—the two forms of "coercive farming"—always when the conditions of tenancy contracts in agriculture are determined by a "monopoly of land lease" which is held by a social class or by the state and which is supported even by administrative measures on the part of the government. (Another instance of coercive labor was contract tenancy in Macedonia under the Turks during and after the Tanzimat; see p. 36.) The Rumanian land reform of 1864 did not go far enough to give real meaning to the formal liberation of the peasants, i.e., to make direct land exploitation for all peasants economically possible. The reform of 1918, however, accomplished this. According to the data of the Rumanian Central Resettlement Office, the percentage of large properties (100 hectares and over) in the total area of rural properties (agricultural land and forests) fell from 40.3 percent "before" the reform (statistical data by provinces for unspecified years) to 10.4 percent "after" the reform (accounting result for 1927, presumably). This far-reaching change in the distribution of land put an end to the era of the agricultural contracts: the system of coercive labor was abolished and direct land exploitation became the predominant land exploitation system in Rumania.

Despite the great variation of agrarian conditions from province to province in *Yugoslavia* at the "moment of birth," there may be distinguished three large agropolitical regions immediately after 1918: (*a*) areas of serf farming—Bosnia and Herzegovina; (*b*) areas of

mixed system of land exploitation with free labor and free tenancy —Croatia-Slavonia, Slovenia, Vojvodina, and Dalmatia; and (*c*) areas of direct land exploitation—Serbia, Macedonia, and Montenegro.

Since it is rather dangerous to infer from the size distribution of farmland to the size distribution of rural-property land when we have to deal with separate provinces, we must rely here on other statistical and historical data.

Bosnia and Herzegovina were the only provinces in the Lower Danube Basin in which the peasants were not liberated from serfdom in the nineteenth century. These provinces were occupied in 1878 and later, in 1908, formally annexed by Austria-Hungary. The Austro-Hungarian government adopted the policy of maintaining in that region the rural order inherited from the Turks. It allowed, however, the *kmets*—the unfree peasants—to buy themselves free upon agreement with the landlord master (*bey, beg,* or *aga*). In 1911 a further step was taken: a law was passed providing for governmental loans to the kmets for this purpose. Yet the government did not go so far as to abrogate the factor of the landlord's consent. According to official data on land tenure in Bosnia and Herzegovina in 1910 there were 262,713 farms; 79,701 of them were operated by "full-kmets" and 31,416 by "part-kmets," and only 151,596 farms, or 57 percent, were operated by farm owners—free peasants and landlords with or without kmets (*18*, pp. 53, 76, 118).

Farming in Dalmatia had been based for centuries on the so-called *colonate*. This is especially true of northern Dalmatia, i.e., that part of the province which during the eighteenth century was under Venetian rule. Colonate is to be understood here in its original meaning as long-term share tenancy based on free contract (see Appendix B). Two facts explain the existence of colonate in Dalmatia: (*a*) that much of the land was under permanent cultures which have the character of long-term investments, like olive orchards and vineyards, and which were very extensive, and (*b*) that Dalmatia was a Roman province which stood in close contact with the metropolis (the colonate was an important system of land exploitation in the Roman Empire). In 1902 in Dalmatia (northern Dalmatia and the area of Dubrovnik, i.e., Ragusa) 83,455 farms were enumerated in the frame of an Austrian agricultural census. Only 47,881 farms, or 57.4 percent, were full-owner farms, while 4,018 farms, or 4.8 percent, were operated by *coloni* and *contadini* (synonym for kmets in

Dalmatia) and 31,502 farms, or 37.7 percent, had a mixed land tenure (*13*, p. 283).

The Yugoslav agrarian reform of 1918 abolished all serf (kmet, contadin) and colonate relations in the country.

It should be observed that not all land distributed to farmers was obtained by expropriation of private and ecclesiastic property. A large part of it came from public—municipal and state—lands (*17*, p. 186). Redistribution of farmland was concentrated in Croatia-Slavonia, Slovenia, and Vojvodina (eastern Baranya, Bachka, western Banat), where large rural properties (including forests) occupied a considerable area.

In Dalmatia, Bosnia, and Herzegovina, and even in Macedonia, the reform consisted mostly in a change of title. In Serbia proper practically no redistribution or change of title took place: direct land exploitation was already firmly established.

In the interwar period Europe can be divided into three agropolitical zones (*33*, pp. 9–45):

1. *Western Europe*, with slow evolution of the existing systems of land exploitation, based on individual private property of land and individual farming. Land settlement, measures against fragmentation (division of plots) and, in some cases, land reclamation were the primary goals of agrarian policy. The United Kingdom, Germany, France, Italy, Belgium, Netherlands, Denmark, Norway, Sweden, and Switzerland belonged to this zone.

2. *Eastern Europe outside of the USSR*, with rapid evolution of the existing system of land exploitation, based on individual private property of land and individual farming or group farming in an embryonic form. This was the zone of agrarian reforms. Affecting the division of rights in land, the governmental measures changed the distribution of farmland by size of exploitation and property units. In addition to that, in the Lower Danube Basin the remnants of serfdom (Bosnia and Herzegovina) and of coercive labor (Rumania) were abolished. This zone embraced the Baltic States (Estonia, Latvia, Lithuania), Poland, Czechoslovakia, Rumania, Yugoslavia, Greece, Hungary, Bulgaria, and Finland, ordered approximately according to the degree of changes in the prereform agrarian conditions.

3. *USSR*, with a revolutionary change of the land exploitation system. Agrarian socialism was introduced there in the form of kolkhozi, with compulsory membership, and state farms.

AGRARIAN REFORMS AFTER WORLD WAR II

A second wave of "postwar agrarian reforms" following that which arose after World War I passed through the Lower Danube Basin in the years 1945 and 1946. The reforms in the individual countries occurred almost simultaneously, which may lead one to suspect a central management of the events. Except in Hungary they were less significant than the agrarian reforms following World War I in both their economic and social implications. Although we have clearly to do with an anticlimax, something must be said about the background of the reforms—about the agrarian structure of the Danubian countries in the interwar period—in order to show the real objective of the reformers and the main aspects of the problem they pretended to solve.

What now follows is a brief description of the land exploitation system, i.e., of land-property system, land tenure, and labor conditions in agriculture by countries for the interwar period (1919–39) or, more precisely, around 1930.

In *Hungary* in 1938, around 25 percent of all land (2,348,000 hectares out of 9,307,000) or 12 percent of the arable land (674,000 hectares out of 5,611,000) was subject to transfer restrictions, i.e., represented public lands, compossessorates, ecclesiastic properties, and fideicommissa (private properties in fee tail passed only to linear heirs) (*34*, p. 80). This was a rather large portion. However, not the extent of transfer restrictions but the size distribution of rural-property land was most striking in comparison with the land-property systems of the other Danubian countries. Properties of 200 or more cadastral holds (115 or more hectares) in 1935 occupied 43.1 percent of all land (see Appendix Table II, p. 111); 84 families at the top of the property pyramid owned as much land as 1,390,000 families at the bottom (15 percent). Such a land property distribution allowed, of course, the flourishing of tenancy both on small and large farms.[11] But socially and with respect to labor, tenancy did not play an important role, since in 1930, 90 percent of the farmers were full owners. According to Julius de Konkolny Thege (*35*, p. 229), 160,000 farms were on leasehold or had mixed land tenure.

Although large gentry farms and giant farms taken together (200 cadastral holds or 115 hectares and over) occupied more land than

[11] Available data for Kingdom of Hungary (including Croatia-Slavonia) show that in 1895 in general only 68 percent of farmland was under full-owner farms; in the farm class of 58 hectares and over this ratio was even smaller—54 percent. For 1935 considerably lower figures should be assumed.

either the medium-sized, small, or dwarf farms, the "peasant sector" of agriculture even without dwarf farms, i.e., small, medium-sized, and large peasant farms taken as a whole (5 to 200 cadastral holds or 2.9 to 115 hectares), had in 1930 a greater share in the total area of farmland than the "feudal sector," namely, 48.1 as against 40.9 percent. This is revealed by Table 11.

Another prominent feature of the land exploitation system of interwar Hungary—the counterpart to the land-property distribution by size of properties—was the high number of landless and land-poor peasants, i.e., the existence of a large "rural proletariat" (see Table 12). Quantitatively the *rural proletariat* of a country may be defined as the sum of (*a*) agricultural workers (in the narrowest sense, i.e., hired persons performing physical work, primarily occupied in agriculture, employed and unemployed) who are not tenant laborers; (*b*) agricultural workers who are tenant laborers, i.e., operators of dwarf farms (under 2 hectares) who are full or part tenants and pay rent in labor; (*c*) operators of farms under 1 hectare (1 cadastral hold in Hungary) who are full owners; and (*d*) operators of dwarf farms who are tenants paying rent in money or produce. The statistical data available for the Danubian countries do not make precise distinctions among the above-mentioned groups. In Table 12 groups (*a*) and (*b*) are given together, since Hungarian census statistics factually treat tenant laborers as agricultural workers in the narrowest sense (*36*, p. 153), while the number of tenant laborers in the other Danubian countries is so small that it can be ignored. As a substitute for groups (*c*) and (*d*) all farms under 1 hectare (1 cadastral hold in Hungary) are considered, i.e., operators of farms who have agriculture as a secondary occupation are not excluded from the rural proletariat. The inclusion of peasants primarily occupied outside of agriculture is obviously a source of error. An adjustment is attempted on the basis of the ratio of the number of independent farm operators to the number of farms (approximately 50 percent for Hungary and 90 percent for Rumania, Yugoslavia, and Bulgaria). It is assumed that the group "operators of farms under 1 hectare or 1 cadastral hold" is free of tenant laborers, i.e., that there is no overlapping with the group of agricultural workers.

According to the concept accepted here the rural proletariat in Hungary amounted to 2.2 million persons approximately (this is the number of landless and land-poor peasants, adjusted for primary occupation outside of agriculture, and multiplied by two, which is the ratio of total agricultural population to agricultural labor force).

TABLE 11.—FARMS AND FARMLAND IN THE DANUBIAN COUNTRIES[a] IN THE INTERWAR PERIOD: DISTRIBUTION BY SIZE OF FARMS*

Class of farms (*hectares*)	Farms (*number*)					Farmland (*1,000 hectares*)[b]				
	Hungary[c] 1930	Rumania 1930	Yugoslavia 1931	Bulgaria[d] 1934	Lower Danube Basin	Hungary[c] 1930	Rumania 1930	Yugoslavia 1931	Bulgaria[d] 1934	Lower Danube Basin
Dwarf farms										
Under 2	—	—	671,865	239,417	—	—	—	694	233	—
Under 3	1,142,294[e]	1,710,000[e]	—	—	3,763,576	1,006[e]	2,520[e]	—	—	4,453
Small farms										
2–5	—	—	676,284	319,688	—	—	—	2,288	1,080	—
3–5	200,341[e]	750,000[e]	—	—	1,946,313	840[e]	3,015[e]	—	—	7,223
Medium-sized farms										
5–50	240,761	795,000	630,619	325,203	1,991,583	3,070	7,850	6,642	2,986	20,548
Large peasant farms										
50–100	6,274	12,800	5,156	561[f]	24,791	502	895	338	69[f]	1,804
Large gentry farms										
100–500	6,332	9,500	1,593	[f]	17,425	1,576	2,095	294	[f]	3,965
Giant farms										
500 and over	1,644	2,700	208	[f]	4,552	2,175	3,375	390	[f]	5,940
Total	1,597,646	3,280,000	1,985,725	884,869	7,748,240	9,169	19,750	10,646	4,368	43,933
					(*Percent of total*)					
Dwarf farms										
Under 2	—	—	33.8	27.0	—	—	—	6.5	5.3	—
Under 3	71.5[e]	52.1[e]	—	—	48.6	10.9[e]	12.8[e]	—	—	10.1
Small farms										
2–5	—	—	34.0	36.1	—	—	—	21.5	24.7	—
3–5	12.5[e]	22.9[e]	—	—	25.1	9.2[e]	15.2[e]	—	—	16.5

Medium-sized farms 5–50	15.1	24.2	31.8	36.8	25.7	33.5	39.8	62.4	68.4	46.8
Large peasant farms 50–100	0.4	0.4	0.3	0.1[f]	0.3	5.5	4.5	3.2	1.6[f]	4.1
Large gentry farms 100–500	0.4	0.3	0.1	[f]	0.2	17.2	10.6	2.8	[f]	9.0
Giant farms 500 and over	0.1	0.1	0.0	[f]	0.1	23.7	17.1	3.6	[f]	13.5
Under 50	99.1	99.2	99.6	100.0	—	53.6	67.8	90.4	98.4	73.4
50 and over	0.9	0.8	0.4	—	—	46.4	32.2	9.6	1.6	26.6

* Data for Hungary from Julius de Konkolny Thege, "The Land and Its Owners: The Management of Farms in Hungary," *Journal de la société hongroise de statistique* (Budapest), 1936, p. 230; for Rumania from Rumania, Institutul Central de Statistică, *Anuarul Statistic al României, 1939 şi 1940* (1940), p. 403; for Yugoslavia from Yugoslavia, Statistique générale d'état, *Annuaire statistique, 1936* (1937), pp. 86 ff.; for Bulgaria from Bulgaria, Direction générale de la statistique, *Annuaire statistique du Royaume de Bulgarie, 1940* (1940), p. 183.

[a] Actual state territories.

[b] Pastures and forests included if operated within the agricultural enterprise. This is important for the upper classes of farms in Hungary and Rumania.

[c] Farms and parts of farms by parishes.

[d] Private farms only.

[e] For Hungary the class limit is 5 cadastral holds (= 2.88 hectares) and for Rumania 3 hectares.

[f] In the statistical sources given as "50 hectares and over."

TABLE 12.—RURAL PROLETARIAT IN THE DANUBIAN COUNTRIES DURING THE INTERWAR PERIOD*

(Thousand persons; percent of agricultural labor force)

Country (actual territory)	Agricultural labor force[a] (number)	Agricultural workers[a, b] (number)	Agricultural workers[a, b] (percent)	Farmers with farms under 1 ha.[c] (number)	Landless and land-poor members of the agricultural labor force (2) + (4) (number)	Landless and land-poor members of the agricultural labor force (2) + (4) (percent)
	(1)	(2)	(3)	(4)	(5)	(6)
Hungary	2,031	787	38.7	552	1,339	65.9
Adjusted[d] ..				276	1,063	52.3
Rumania	8,170	731	8.9	610	1,341	16.4
Adjusted[d] ..				550	1,281	15.7
Yugoslavia ...	5,082	475	9.3	334	809	15.9
Adjusted[d] ..				300	775	15.2
Bulgaria	2,745	140	5.1	120	260	9.5
Adjusted[d] ..				110	250	9.1

* Hungary and Rumania, December 1930; Yugoslavia, March 1931; Bulgaria, December 1934.

Data on labor: for Hungary from W. E. Moore, *Economic Demography of Eastern and Southern Europe* (League of Nations, Econ., Fin., Transit Dept., Geneva, 1945); for Rumania from Rumania, Institutul Central de Statistică, *Anuarul Statistic al României, 1937 şi 1938* (1938), I, 32, and FAO, *Yearbook of Food and Agricultural Statistics, 1950*, IV, Pt. 1 (Washington, 1951), 17; for Yugoslavia from Yugoslavia, Statistique générale d'état, *Annuaire statistique, 1936* (1937), pp. 32 ff. For Bulgaria from Bulgaria, Direction générale de la statistique, *Annuaire statistique du Royaume de Bulgarie, 1942* (1942), p. 51.

Data on farms: for Hungary from Julius de Konkolny Thege, "The Land and Its Owners: The Management of Farms in Hungary," *Journal de la société hongroise de statistique* (Budapest), 1936, p. 230; for Rumania from *Anuarul Statistic al României, 1939 şi 1940* (1940), p. 403; for Yugoslavia from *Annuaire statistique, 1936*, pp. 86 ff.; for Bulgaria from *Annuaire statistique du Royaume de Bulgarie*, 1940, p. 183.

[a] Bulgaria: including forestry and fishing; Rumania: including domestic servants in rural households.

[b] Hired physical labor, including tenant laborers.

[c] Excluding tenant laborers. Hungary: farms and farm parts under 1 cadastral hold by parishes; Bulgaria: private farms.

[d] Adjusted for primary occupation outside of agriculture.

In view of the fact that small, medium-sized, and large peasant farms (2 to 100 hectares) occupied 48.1 percent of all farmland, and taking into consideration that among the dwarf farms (occupying 11 percent of all farmland) there were self-supporting farms too, we may say that the Hungarian land was worked 50 percent by family labor on owner farms and 50 percent by hired labor on large-owner or tenant farms.

Toward the end of the interwar period, *Rumania* had reached a stage of development at which medium-sized farms and medium-sized properties on farmland were, so to speak, the center of gravity

in agriculture: in 1941 the group "5 to 50 hectares" embraced 50.6 or 47.3 percent of the farmland (farms or properties, respectively). Exploitation units and property units smaller than 5 hectares played a less important role. Although it refers to a territory from which Northern Transylvania, Northern Bukovina, and Bessarabia are excluded, Table 13 gives clear statistical evidence of this fact. The full

TABLE 13.—FARMS, FARMLAND, AND FARMLAND PROPERTIES IN RUMANIA 1941: DISTRIBUTION BY SIZE OF FARMS OR PROPERTIES*

Class of units (*hectares*)	Exploitation or property units		Farmland	
	Farms[a]	Properties	Farms	Properties
	(*Number*)		(*Thousand hectares*)	
Under 5	1,661,833	1,733,439	3,342	3,469
5–10	447,722	381,444	3,073	2,707
10–50	141,136	132,411	2,202	2,223
50–100	4,378	4,891	318	315
100 and over....	3,461	4,865	1,484	1,705
Total	2,258,530	2,257,050	10,419	10,419
		(*Percent of total*)		
Under 5	73.6	76.8	32.1	33.3
5–10	19.8	16.9	29.5	26.0
10–50	6.3	5.9	21.1	21.3
50–100	0.2	0.2	3.1	3.0
100 and over....	0.1	0.2	14.2	16.4

* Data from Rumania, Institutul Central de Statistică, *Recensământul agricol al României din 1941: Data provizorii* [compiled by Roman Cresin] (Biblioteca Statistica 10, 1945), p. 17.

[a] Definitive data: 1,692,501 (under 5 hectares); 449,716 (5–10 hectares); 144,382 (10–50 hectares); 16,873 (50 hectares and over); 2,303,472 (total). See A. Golopentia and P. Onică, "Recensământul agricol din Republica Populară Romană, 25 Ianuarie 1948, Rezultate provizorii," *Probleme economice* (Rumania, Institutul Central de Statistică), March 1948, p. 19.

symmetry of the size distribution of farms and that of farmland properties discloses that there was no interclass tenancy. In his analysis of the agricultural census data of 1941, Cresin (*37*, pp. 24–26), however, proves that interclass tenancy was still considerable. Of 1,732,030 farms whose operators had agriculture as a primary occupation (*exploatațile agricole propriu zise*, with 9,822,000 hectares of land, the number of all farms being 2,258,530 with 10,187,000 hectares of land, preliminary figures) only 6,913 (.4 percent) were full-tenant farms, while 480,969 farms (27.8 percent) had a mixed land tenure. Judging from the data of the agricultural census of 1930, Rumania

had in the interwar period a larger rural proletariat than Bulgaria, but far smaller than Hungary—namely, 16 percent of the agricultural labor force, as against 9 percent in Bulgaria, and 52 percent in Hungary (see Table 12).

Lack of statistical data on rural properties makes a description of the land-property system of interwar *Yugoslavia* impossible. But the fact that tenancy was almost nonexistent leads to the conclusion that the size distribution of farms in 1931 (see Table 11 and Appendix Table III, p. 112) reflected fairly well both production and property structure of Yugoslav agriculture during that period. For Yugoslavia as a whole, land taken on lease made up no more than 4.1 percent of farmland; in other words, 95.9 percent of the farmland was cultivated in freehold.

The scale of agricultural production differed from *banovina* to *banovina* (*banovine* were the largest administrative units). Nevertheless, speaking in terms of acreage, medium-sized farms were the predominant class throughout the country (Table 11). They comprised more than 50 percent of the farmland in all banovine, except in Savska banovina and Primorska banovina where small and dwarf farms comprised relatively more farmland and large farms still played a role deserving attention. A good many of the large farms were to be found also in Dravska banovina (i.e., Slovenia).

The number of landless and land-poor peasants in Yugoslavia was almost at the same level as in Rumania at that time—15.2 as against 15.7 percent of the agricultural labor force (see Table 12).

Interwar *Bulgaria* was an example of complete application of the system of direct land exploitation (see Appendix Tables VI-A and VI-B, pp. 116–17). Predominance of medium-sized units in the size distribution of both rural-property land and farmland, symmetry of these two distributions, and the absence of large properties and large farms justify this statement, as Appendix Table IV shows. The tendency of development from 1934 to 1946 was—in spite of the reincorporation of Southern Dobruja into Bulgaria—toward small farms (2 to 5 hectares).

Full-tenant farmland in Bulgaria amounted in 1934 to 56,000 hectares or 1.3 percent of all private farmland; of 884,869 private farms only 19,817 or 2.2 percent were operated as full-tenant farms. At the same time the number of landless and land-poor peasants was very small—about 250,000 or 9.1 percent of the agricultural labor force (see Table 12).

The agrarian reforms undertaken in the Lower Danube Basin

after World War II aimed at redistribution of farmland (see Appendix Table V). However, as the above survey of the land exploitation systems shows, in no Danubian country except Hungary was there an urgent need for that. The Hungarian land reform of 1945, long overdue, corresponded in its nature and extent to the Rumanian land reform of 1918; it imposed direct land exploitation as the principal land exploitation system, although in Hungary farming, after the liberation of the peasants, had not a coercive character, as had been the case in Rumania. In Rumania and Yugoslavia the agrarian reforms of 1945 amounted to expropriation of all classes of large land properties which had survived the first wave of postwar agrarian reforms (1918 and 1919).

Appendix Tables VI-A and VI-B, the result of the synthesis of voluminous statistical material, give information about the changes in the absolute number of farms during the last fifty years in the Lower Danube Basin. These tables provide a good example of how little can be inferred from data on number of farms as to development of agrarian structure if they are not accompanied by data on farmland. However, the table shows that slowly but definitely large-scale noncorporative farming disappeared from the Lower Danube Basin.

Instead of devoting their attention to land reclamation, and to the methods of land cultivation (crop rotation, use of manure and commercial fertilizers, agricultural technique, introduction of new crops, and plant improvement by selection or crossbreeding), the governments of the Danubian countries after World War II first went on in the old path and then—in a very short time—joined the revolutionary agrarian policy of the USSR. Why did they feel it necessary to announce a redistribution of land when the socialization of agriculture was already in sight?

The agrarian reforms in the Lower Danube Basin after World War II were a "tactical maneuver" dictated by the political conjuncture. The Communist parties did not come to power by revolution but by "coups d'état" under the protection of the Russian occupation forces. Under such circumstances the socialization of the national economy could not be attempted in all directions at the same time. Since the peasants constituted the majority of the population, the new governments tried to win their support or at least to weaken their resistance by simulating adherence to the principle of private land property in order to be able to carry through successively the socialization of the nonagricultural sectors of the national economy.

SOCIALIZATION OF AGRICULTURE

In an agricultural enterprise—as a "business unit," which may consist of one or more farms as operational units—cultivator, i.e., landholder, may be an individual, a group of individuals, or a public body (see p. 30). According to that, distinction can be made between *individual* farming, *group* farming, and *public* farming. Individual and group farming are varieties of *private* farming, which is conceptually opposite to public farming. On the other hand, group farming (when the group is a juristic person) and public farming are varieties of corporative farming (in a broad sense) which is conceptually opposite to individual and partnership farming (see classification scheme in Table 14).

In this connection it is necessary to clarify the concept of *co-operative* and *collective farming*. A co-operative can be defined as

TABLE 14.—CLASSIFICATION OF AGRICULTURAL ENTERPRISES ACCORDING TO RISK BEARING AND JURIDICAL FORM IN A CIVIL LAY ECONOMY

<table>
<tr><td colspan="6">Private farming</td><td>Public farming</td></tr>
<tr><td rowspan="2">Farms of individuals</td><td colspan="5">Group farms</td><td rowspan="2">State farms</td></tr>
<tr><td colspan="3">With free membership</td><td colspan="2">With compulsory membership</td></tr>
<tr><td colspan="2">Natural persons</td><td colspan="4">Juristic persons</td></tr>
<tr><td rowspan="2">E.g., family farms</td><td rowspan="2">E.g., farms of business partners</td><td>Joint stock companies</td><td>Co-operatives</td><td rowspan="2">E.g., joint cultivation groups with compulsory membership and private land property</td><td rowspan="2">E.g., joint cultivation groups with compulsory membership and state land property (Arteli in the USSR)</td><td rowspan="2">E.g., Sovkhozi in the USSR</td></tr>
<tr><td>E.g., farms of joint stock companies</td><td>E.g., joint cultivation groups with free membership and private land property</td></tr>
<tr><td colspan="6">Collective farms in the usual sense</td></tr>
<tr><td colspan="5">Nonsocialized sector of agriculture</td><td>Socialized sector of agriculture</td></tr>
<tr><td>Noncorporative farms</td><td colspan="5">Corporative farms</td></tr>
</table>

a *free* association of individuals—a corporation in the juridical sense —in which the entrepreneur is identical with the subject of some other production-factor function. Both individual farming and group farming can take the form of co-operative farming. The activity of co-operatives in agriculture ranges from joint land exploitation (e.g., communes in the USSR) and joint land cultivation (e.g., "Labor Co-operative Farms" in Bulgaria before the communistic regime) in the sphere of group farming, to joint field operations, including irrigation (e.g., "Water Syndicates" in Bulgaria before the communistic regime), joint business operations (e.g., Gospodarska Sloga in Croatia, 1938–40; all kinds of marketing co-operatives, co-operatives for joint purchases, and credit co-operatives in general) and joint processing operations (e.g., dairy co-operatives in general), in the sphere of individual farming.[12]

It must be admitted that in a broad sense every group farm is a "collective" farm, the risk of production being collectively borne by the members of the group, and that even state farms are collective farms, since they embody a collectivistic social order. *However, by collective farms in the usual and very narrow sense are understood only the farms of joint cultivation groups.*

Two forms of kolkhoz in the USSR deserve special attention from the viewpoint of this analysis: the *TOZ* (plural: unchanged) and the *artel* (plural: *arteli*). "TOZ" is an abbreviation of the Russian expression *Tovarishchestvo dlja Obrabotki Zemli*, which means "association for the working of the land." "Kolkhoz" is an abbreviation of *kollektivnoe khozyastvo*, meaning literally "collective economy." Naum Jasny, who is an authority on the subject, describes these two forms of kolkhoz in brief as follows (*39*, p. 300): "The TOZ . . . was the loosest form of organization. All productive livestock and most workstock remained private property. Even the working of the soil and the machinery for this were only partly collectivized in the TOZ. The artel was intermediate between the commune and the TOZ, with field work almost entirely collectivized and productive livestock partially so." In the USSR the TOZ passed their culminating point in 1929; the basic form of the kolkhoz at present is the artel. In 1929 there were 4,654 communes, 20,773 arteli, and 42,019

[12] The "farming co-operatives" established by the German authorities during World War II in occupied Russia were a mixed form—a transition from individual to group farming, from individual to group property, and, therefore, from family farm to TOZ (see text below). They may be defined as co-operatives for joint field operations with group layout of plots (consolidated land) and group property of farm equipment and draft animals (see *38*, esp. pp. 2, 6, 10).

TOZ; in 1933 the corresponding figures were 4,000, 216,200, and 4,300. The percentage of TOZ in the number of kolkhozi fell from 62.3 to 1.9, that of arteli rose from 30.8 to 96.3 (*39*, p. 320). This fact throws light on the recent development of farming in the Danubian countries. Collectivization started with the formation of *joint-cultivation co-operatives*, i.e., free membership groups for joint cultivation of private land property, corresponding to the TOZ in the USSR during the *samotëk* era, the time when membership was free and management depended on the will of the TOZ members.[13] Later —after the collectivization drive began—these co-operatives lost their free character: joining became compulsory and management became dependent on the state authorities. The name "co-operative" remained, though now it applied to compulsory-membership groups for *joint cultivation of private land.* The next step in collectivization was the introduction of the artel, which may be defined as compulsory membership group for *joint cultivation of state land.* At the same time, i.e., from the beginning of the collectivization drive, state farms were established. Thus the socialization of agriculture took two forms, which fall under the concept of corporative farming.

In Hungary "joint land-tenancy co-operative groups" already existed before World War II (1930: 60 groups with 6,867 farmers; *41*, p. 224), similar to the collective tenant farms with "divided control" in Italy. The collectivization drive started with Decree No. 8,000 (in force from August 13, 1948) on the "Production Group Co-operatives" (*42*, p. 69; *43*, p. 6; *44*, p. 219; *45*, p. 17). According to the scope of the law and in practice the Hungarian Production Group Co-operatives include co-operatives formed for joint field operations of any kind, which still represent individual farming, and joint-cultivation co-operatives or groups, which are collective farms in the proper sense. It is not clear whether there are arteli among the joint-cultivation groups or not.

Little is known about the legislation on socialization of agriculture in Rumania. Farms of the Russian kolkhoz type were established in July 1949 (*44*, p. 221), but no further information is available as to their nature. Again in July 1949 the National Assembly ratified a decree giving the state the right to expropriate land for the

[13] The Land Code of 1922 proclaimed the eminent domain of the State over all land within the territory of the Union (*40*). However, during the NEP (New Economic Policy) Period, 1921–28, state ownership of land was a fiction (*39*, p. 137). Thus *de jure* and *de facto* situations differed and socialization appears to have preceded or followed collectivization according to whether the *de jure* or *de facto* situation is considered relevant.

purpose of creating state farms (*44*, p. 221). Co-operatives for joint field operations were first organized in February 1949.

In Yugoslavia collective farms appeared in the form of joint-cultivation farms with private property as early as 1946, i.e., shortly after the establishment of the Communist regime. This was enacted under the Federal Law on Co-operatives of July 1946, dealing with co-operatives in general. It seems that until 1948 the development of the "Peasants' Work Co-operatives" or Seljacke Radne Zadruge (as all collective farms without distinction between arteli and TOZ are called in Yugoslavia) was predominantly based not on compulsory measures but on economic advantages (*44*, p. 217). In May 1949 a special Federal Law on Agricultural Co-operatives was passed. It distinguishes four types of co-operatives; three of them are modifications of joint-cultivation groups with private property and the fourth is the artel (*44*, p. 218). According to Pauline Michael, by midyear 1950 only 5 percent of all "Peasant Work Co-operatives" were arteli (*44*, p. 218). It is significant that collectivization made the greatest progress in Vojvodina, which was leading in tenancy and rural proletariat among all Yugoslav provinces (see data of the agricultural census of January 15, 1950 in *46*, p. 30; Vojvodina is now an autonomous province of Serbia, a member state of the Federal People's Republic of Yugoslavia), and in which, on the other hand, the expulsion of the German settlers made land available.

In Bulgaria, the Danubian country with the most advanced co-operative movement in general, the first joint-cultivation co-operatives were founded in 1938 in northern Bulgaria (Pleven district). In April 1945 the Law on Labor Co-operative Farms (Trudovi Cooperativni Zemeldeski Stopanstva) was passed. However, there was little progress in collective farming up to 1948 when compulsory measures were applied (on the resistance of the Bulgarian peasantry to socialization see *47*, pp. 114–15). In 1950 socialization of agriculture in Bulgaria overtook the development in all other Danubian countries.

The "turning point"—the year in which pressure on farmers in the form of higher taxes and increased obligatory deliveries was intensified and applied on a wide front to force them to join the collective farms—appears to have been 1948 for Bulgaria and Yugoslavia, and 1949 for Hungary and Rumania. After that one cannot properly speak of collective farms as free associations and co-operatives. But the largest absolute increase of land under all kinds of

corporative farms established by authoritative act in all four Danubian countries, taken together, is shown, so far, for the year 1950. Up to the end of 1950 the highest degree of socialization in agriculture, as measured by the ratio of farmland under collective and state farms to the country's cropland (equal to arable land, i.e., area sown and fallow land, plus area of multiennial cultures—orchards and vineyards, "tree and bush crops"—and permanent meadows), was reached in Bulgaria (51 percent), followed by Yugoslavia (28 percent) and —at a considerable distance—by Hungary (15 percent) and Rumania (10 percent). This can be seen from Tables 15 and 16. On the more recent development see Appendix B, page 98.

The fundamental problems of agriculture in the Lower Danube Basin, apart from most of Hungary, are water shortage and the splitting up of land in its two aspects (diminishing of the average farm, i.e., division of land property, and fragmentation, i.e., division of plots).[14] The solution of these two problems would lead to an increase of gross return per unit of land and, indirectly, to an increase of net real income per capita of labor force in agriculture.

From an agropolitical point of view the water problem and the land-splitting problem could be solved in three different ways. The governments of the Danubian countries could do one of these three things:

1. Preserve the principles of individual farming, direct land exploitation, and unrestricted transfer of land property; carry through irrigation by peasant co-operatives or state projects and overcome the splitting up of the land by co-operatives for joint field operations.

2. Preserve the principles of individual farming and direct land exploitation, but control alienation and inheritance of land to favor medium-sized farms; carry through the irrigation in the same way as in the preceding case.

3. Introduce collective farming with arteli as the final stage; carry through irrigation by state projects.

The development of social ideas was against solution number 2. Before World War II solution number 1 was accepted in Bulgaria (where the Water Syndicates gave excellent results in the valleys of Maritsa and Struma), and propagated in Yugoslavia (where the Gospodarska Sloga, the co-operative organization of the Croat Peas-

[14] The main problem of Hungarian agriculture was and still is the existence of a large rural proletariat. Although it is connected with organization of agriculture, this is a social rather than an economic problem.

ant party, was making good progress). The Communist governments imposed solution number 3. They did that not only for the economic reasons—with consideration of the distribution of labor and capital among the sectors of production and of capital formation or, to put it in another way, in order to carry through a rapid industrialization by pressing down the level of living of the peasants—but also for political reasons: the kolkhoz system gives the government direct control over the peasants and indirect control, through the food supply, over the urban population.

If one visualizes the conditions of farming in the arteli—the ideal toward which the agrarian policy is now directed—the following picture emerges.[15]

All land—the lands pooled in the "united land massive" for joint cultivation as well as the parcels left to the kolkhoz members for private use (one-fourth to 1 hectare per family household)—is state property given to the artel in perpetual usufruct. All draft animals and all implements and machines are socialized. The artel cultivates the land in accordance with the general agricultural plan of the state. The "united land massive" of the artel is divided into rotation fields, and the rotation fields are divided into large plots. On each plot a group of kolkhoz members (a "brigade") works for a full rotation period.

From the harvest and the produce of animal husbandry the artel first fulfills its obligations in kind to the state ("First Commandment"). Then it pays the machine tractor stations for their services and puts aside what is needed for seed and feed during the next crop year. After that it sells a part to to the state or in the market. From the cash receipts the artel first pays to the state the "legally established" taxes.

The rest of the harvest and of the animal products in kind, as well as 60 to 70 percent of the cash receipts, are distributed among the members of the artel according to the amount and type of work done.

Thus the system of direct land exploitation is being replaced by a system in which the state is the landlord holding the monopoly of land lease. The peasants are *de facto* tied to the land, since they cannot obtain land outside of the kolkhoz. They are tenant laborers of the state.

The Danubian peasants are now losing the freehold of the land—

[15] According to the "Model Statute of Agricultural Artel [Trudova Zadruga] in the USSR," published in Bulgaria with the changes made to conform to the decisions of the Council of the People's Commissars and of the Central Committee of the Communist party from April 19, 1938, Sofia, 1945, Articles 2, 3, 4, 6*d*, 11, 15, 19.

TABLE 15.—CORPORATIVE FARMS ESTABLISHED BY AUTHORITATIVE ACT (SOCIALIZED SECTOR OF AGRICULTURE) IN THE DANUBIAN COUNTRIES, DECEMBER 1950*

Item	Hungary	Rumania	Yugoslavia	Bulgaria	Lower Danube Basin
Corporative farms:					
Collective farms.....	1,500[a]	1,029	6,988	2,568	12,085
State farms	...	...	200[b]	90[c]	...
Total	...	...	7,188	2,658	...
Land in corporative farms, 1,000 hectares:					
Collective farms.....	467	268	2,216	2,240	5,191
State farms	473	852[d]	585[b]	85[c]	1,995
Total	940	1,120	2,801	2,325	7,186
Percentage distribution:					
Collective farms.....	49.7	23.9	79.1	96.3	72.2
State farms	50.3	76.1	20.9	3.7	27.8
Country's cropland[e]:					
1,000 hectares	6,482[f]	10,787[f]	10,166	4,537	31,972[f]
Year	(1947)	(1947)	(1949)	(1947)	(1947)
Country's farmland:					
1,000 hectares	9,169	19,199	10,646	4,894	...
Year	(1930)	(1948)	(1931)	(1946)	...
Land in corporative farms as percent of country's cropland:					
Collective farms.....	7.2	2.5	21.8	49.4	16.2[f]
State farms	7.3	7.9	5.8	1.9	6.2[f]
Total	14.5	10.4	27.6	51.3	22.4[f]
Land in corporative farms as percent of country's farmland:					
Collective farms.....	5.1	1.4	20.8	45.8	...
State farms	5.2	4.4	5.5	1.7	...
Total	10.3	5.8	26.3	47.5	...

* Data for corporative farms from Pauline McD. Michael, "Collectivization Along the Danube," *Foreign Agriculture* (U.S. Dept. Agr.), October 1951, pp. 220, 221. Data for cropland from FAO, *Yearbook of Food and Agricultural Statistics, 1950*, IV, Pt. I (Washington, 1951), 3, and *ibid., 1949* (1950), Pt. I, p. 13; Bulgaria, Direction générale de la statistique, *Bulletin mensuel*, November 1947, pp. 304–05; IIA, *International Yearbook of Agricultural Statistics, 1941–42 to 1945–46* (Rome, 1947), III, 64, 126; Yugoslavia, Statistique générale d'état, *Annuaire statistique, 1941*, pp. 16–18; Rumania, Institutul Central de Statistică, *Statistica Agricola a României in 1937* (1938), I, 53. For farmland see Table 11, p. 48, and Appendix Table VI-A, p. 116.

[a] Including joint field operation co-operatives, December 1949.

[b] Approximation of large state farms.

[c] Number and area of state farms, May 1950.

[d] Area of state farms, October 1950.

[e] Cropland is equal to arable land (i.e., area sown and fallow land) plus orchards and vineyards (i.e., multiennial cultures, "tree and bush crops") and permanent meadows.

[f] Approximation.

that freehold for which they had striven through centuries and which they had acquired in the course of the last 140 years—since the uprising of Takovo (1815).

On the pressure which the growth of population has exercised during the last 70 years upon agrarian conditions in the Lower Danube Basin see Appendix B, page 99.

TABLE 16.—COLLECTIVE FARMS, HOUSEHOLDS AND LAND IN COLLECTIVE FARMS IN THE DANUBIAN COUNTRIES, DECEMBER 1950*

Item	Hungary[a]	Rumania	Yugoslavia	Bulgaria	Lower Danube Basin
Number of collective farms	1,500	1,029	6,988	2,568[c]	12,085
Number of households belonging to collective farms (1,000)	39	66[b]	415	564[c]	1,084
Households per collective farm	26	64	59	220	90
Land in collective farms:					
Total (1,000 hectares) ..	467	268[b]	2,216	2,240[c]	5,191
Per collective farm (hectares)	311	260	317	872	...
Per household (hectares)	12.0	4.1	5.3	4.0	4.5
Average size of farm around 1930	5.7	6.0	5.4	4.9	...

* Data for collective farms from Pauline McD. Michael, "Collectivization Along the Danube," *Foreign Agriculture* (U.S. Dept. Agr.), October 1951, p. 220; for average size of farm round 1930 see Table 11, p. 48.

[a] December 1949.

[b] By April 1951 these figures had risen respectively to 344,000 households and 414,000 hectares.

[c] By December 1953 these figures had risen respectively to 2,747 collective farms, 568,989 households, and 2,512,500 hectares (*Zemedelsko Zname*, Sofia, Dec. 4, 1953).

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CHAPTER 4

FOOD BALANCE

INTRODUCTION

Since the food balance of a country embraces, on the one hand, crop and animal production and, on the other, human and animal consumption, a food-balance analysis gives a more comprehensive and integrated picture of the important facts of agriculture—of the changes or differences in cropland, yields per unit of land, number and weight of livestock, efficiency of farm animals as transformers of matter, stocks of food and feed, foreign trade in food and feed commodities, and methods of processing foods—than a study of each separately.

Unfortunately, as in the case of net product of agriculture (see chap. 2), a complete set of food-balance figures covering all four Danubian countries does not exist. The food balances of Hungary and Yugoslavia, computed by the Food and Agriculture Organization of the United Nations in 1949 (*1*, pp. 67–72, 139–44) refer to the prewar and the postwar periods; the years of war in which we are most interested are not included. For the war period the food balance has been computed only for Bulgaria—by Christina Motcheva and Svetoslav Dimitroff, under the influence of the pioneer studies of Voit (Germany), Atwater (United States), and Leontovitch (USSR).

Because of this basic difficulty—lack of statistical data—an attempt to establish the war-food balance for all four Danubian countries as a whole had to be carried through on new lines. The most important instances of missing information are: data on animal production and food processing for Hungary, Rumania, and Bulgaria; data on production in general for Yugoslavia (except on crop production for 1940 and 1945); and data on noncommercial exports, i.e., military seizures and fulfilled armistice obligations, from Yugoslavia to Germany and from Rumania to the USSR, in 1944 and 1945.

In order to overcome the statistical handicaps, the food balance had to be related to the supply stage of vegetal primary production, i.e., crop production. At that stage the flow of food supplies is not

yet affected by organic or inorganic transformation of matter or by foreign trade, and many gaps in our data still could be filled by different methods of estimation. In all food-balance computations hitherto made for Danubian or other countries the balance has been related to the supply stage of retail or wholesale trade.

The food commodities of which the food intake is composed form a flow which comes out of the harvest of vegetal farm products and passes through many supply stages before it finally reaches the stage of human digestion and metabolism, i.e., before the food is eaten. At some of these stages—like production of food of animal origin in animal husbandry, processing of vegetal farm products in industry, preparing of food for consumption in households, etc.—it undergoes an organic or inorganic transformation, its composition as to kind of commodities changes, and its total nutritive value shrinks.

In any food balance two stages of special importance must be conceptually distinguished. These are the *closing* and the *basic* stage. The closing stage is the supply stage the carryover of which we are trying to ascertain. The basic stage is the supply stage the carry-in of which is our starting point. When the closing and the basic stages coincide the balance covers one stage only.

What we are usually most interested in is the *effective food supply at the closing stage.* This is the carryover of the closing stage—the surplus of inflows over outgoes at all supply stages covered by the balance.

TRIAL FOOD-ENERGY BALANCE OF THE LOWER DANUBE BASIN FOR THE STAGE "CROP PRODUCTION"

Table 17 presents the result of a computation of the food balances of Hungary, Rumania, Yugoslavia, and Bulgaria. Since they are based on comparable data and identical concepts, the four country balances can be combined in a balance valid for the Lower Danube Basin as a whole. The general balance thus attained covers the prewar period (1934–38) and the war period (1940–45); the war period is divided into First War Triennium (1940–42) and Second War Triennium (1943–45).

The balance is expressed in heat-energy units (large calories). However, the balance figures refer to two different kinds of food energy: the heat-energy equivalent of food crops, i.e., food crops proper and feed cereals, is in terms of energy metabolizable for man (EMM), while the heat-energy equivalent of bulky fodder, i.e., of roughage, succulent or dry, and roots and tubers, is in terms of

TABLE 17.—TRIAL FOOD-ENERGY BALANCE OF THE LOWER DANUBE BASIN, AVERAGES 1934–38, 1940–42, AND 1943–45; VEGETAL PRIMARY PRODUCTION (CROP PRODUCTION) AS BOTH BASIC AND CLOSING STAGE (ENERGY METABOLIZABLE FOR MAN [EMM] OR ENERGY NET FOR ANIMALS [ENA])

(American billions of large calories)

Country (State territory as defined in Appendix C, note 1)	Carry-in: Quantity harvested by man and animals		Waste	Production discounts			Carryover*	
			Losses between threshing and withdrawal from barn	Seed (used in the balance year)	Feed I: vegetal farm products used as fodder of draft animals on farms for:			
					Basal metabolism (requirements)	Work in agriculture (above maintenance)		
	Food crops EMM	Bulky fodder ENA	Food crops EMM	Food crops EMM	Bulky fodder ENA	Bulky fodder ENA	Food crops EMM	Bulky fodder ENA
	(1)	(2)	(3)	(4)	(5)	(6)	(7) = (1)−(3)−(4)	(8) = (2)−(5)−(6)
PREWAR PERIOD: 1934–38								
Hungary	23,340	4,628	233	2,229	3,281	570	20,878	777
Rumania	40,010	16,872	400	4,458	9,986	1,174	35,152	5,712
Yugoslavia	30,220	13,619	302	2,706	8,135	748	27,212	4,736
Bulgaria	11,654	7,448	117	1,540	3,322	350	9,997	3,776
Lower Danube Basin	105,224	42,567	1,052	10,933	24,724	2,842	93,239	15,001
FIRST WAR TRIENNIUM: 1940–42								
Hungary	27,623	12,960	276	2,698	8,268	845	24,649	3,847
Rumania	27,561	12,886	276	4,236	8,357	914	23,049	3,615
Yugoslavia	28,316	9,338	283	2,361	6,056	715	25,672	2,567
Bulgaria	9,566	8,207	96	1,575	3,638	354	7,895	4,215
Lower Danube Basin	93,066	43,391	931	10,870	26,319	2,828	81,265	14,244
SECOND WAR TRIENNIUM: 1943–45								
Hungary	27,091	8,849	271	2,617	6,757	806	24,203	1,286
Rumania	29,513	11,440	295	4,000	7,572	918	25,218	2,950
Yugoslavia	18,434	5,470	184	2,099	3,654	671	16,151	1,145
Bulgaria	8,894	6,706	89	1,494	3,622	362	7,311	2,722
Lower Danube Basin	83,932	32,465	839	10,210	21,605	2,757	72,883	8,103

* Effective food supply at the closing stage of the balance: Vegetal farm products: (*a*) home consumption on farms; (*b*) used as fodder of nondraft animals for production of food of animal origin (Feed II, including maintenance); (*c*) used as fodder for draft animals on farm for work outside of agriculture (Feed III, above maintenance); (*d*) sales by farmers (less quantities sold to farmers and included in *b* and *c*).

energy net for animals (ENA). At the stage of crop production—the stage which in the given case serves as the closing stage of the balance—a conversion of the energy net for animals into energy metabolizable for man is not possible.

Since it is established in terms of energy metabolizable for man and energy net for animals, the food balance presented in Table 17 takes into account the reduction of the "food-energy stream" in the human or animal body, i.e., the losses of gross energy (heat of combustion) of the food or feed intake in digestion and metabolism either partially (metabolizable energy) or fully (net energy).

Methodological and factual notes to Table 17 are given in Appendix C., pages 104 ff. Here only the nature of the individual balance items will be briefly explained.

In columns 1 and 2 the carry-in of the stage "crop production" ("production of vegetal farm products") is shown; this is the quantity harvested by man and animals, identical with the carryover of plant metabolism to crop production. In column 3 the "waste" is confined to the "normal" losses which occur between threshing and withdrawal from the barn. In columns 4, 5, and 6 are reckoned—as production discounts—the quantities used as seed in the given year (important for food crops only) and Feed I. Feed I consists of vegetal farm products which must have been used as fodder on farms in order to produce the harvest; it falls into two parts: quantities corresponding to the requirements of basal metabolism of draft animals and quantities required for work of draft animals in agriculture (above maintenance). In columns 7 and 8, containing the carryover of the stage "crop production," is shown the effective food supply before entering into the households of the farms, the animal husbandry in its capacity as transformer of feed into food, the food-processing industries, and the trade.

Since the carryover of the balance given in Table 17—the effective food supply at the stage of crop production—is somewhat complicated, its meaning should be discussed in more detail.

As a surplus of "inflows" (though negative in the accounting sense) the carryover of crop production embraces: (*a*) home consumption of vegetal farm products on farms; (*b*) vegetal farm products used as fodder of nondraft animals for production of food of animal origin (Feed II, including maintenance); (*c*) vegetal farm products used as fodder of draft animals on farms for work outside of agriculture (Feed III, above maintenance); (*d*) sales of vegetal farm products by farmers (less quantities sold to farmers and in-

cluded in items *b* and *c*). It is obviously not the same as "total quantity of food available for consumption" if this expression is used in its narrowest sense, that is to say, food ready for consumption in the households. When imports and stock changes do not enter the field or are insignificant, the effective food-energy supply at the end point of crop production exceeds the effective food-energy supply at the end point of household services by the amount of energy lost in exports, in all kinds of waste, in production discount resulting from transformation of matter (i.e., from digestion and metabolism of nondraft animals, processing of vegetal and animal products, and preparing of food for consumption), and in basal metabolism of nondraft animals (sheep, goats, dairy cows, poultry, and pigs).

The bulky-fodder part of the carryover in Table 17 should not be interpreted as the "total amount of net metabolizable energy used for maintenance of nondraft animals and production of food of animal origin." It represents the surplus of bulky fodder from the current harvest remaining after the deduction of the quantity necessary for maintenance and work of the draft animals. This is of course true only from an accounting point of view. In reality, both concentrated and bulky fodder are used for all purposes of feeding: maintenance, work, and production of food of animal origin or wool. In some countries, like Bulgaria, the "accounting surplus" of bulky fodder is relatively large and plays an important role in the production of meat, fat, and milk. In other countries, Hungary, for example, it is very small or sometimes even nil. Here the harvest of bulky fodder (grazed and mown) ordinarily does not cover the energy requirements of draft animals; from an accounting point of view concentrated fodder is then not only the sole source of chemical energy for production of meat, fat, milk, and eggs, but also serves to meet the maintenance requirements of nondraft animals as a whole and to fill the gaps in the feeding of draft animals.

Although the data on crop yields, cropland, seeding rates (with some exceptions), and livestock used in the computation are obtained by official statistical procedure, the balance presented in Table 17 has the character of an estimate. In the first place, this is so because both the conversion of matter into energy (of weight units into calories) and the conversion of livestock into metabolic units are based on conventional standards and certain assumptions as to their validity (Appendix C, pages 104 ff.). Furthermore, assumptions are made as to the production and consumption of bulky fodder and as to seeding rates. The main assumptions concerning

bulky fodder are: that yields of crops per hectare in Yugoslavia are positively correlated to those in Hungary and Bulgaria; that in annual analysis the quantity of bulky fodder produced per unit of livestock does not decrease relatively so much as the physical yield of fodder per hectare (because when yields go down grazing is extended in time and area and thus tends to offset the decrease of yields); and that the basal metabolism requirements of draft animals were fully covered at the prewar level throughout the war. As to seeding rates, it is assumed that the prewar rates prevailed also during the war period. In spite of all these shortcomings the analysis of the food balances thus computed leads to conclusions which seem reasonable and are in agreement with the results arrived at in other chapters of the General Survey.

Let us examine now the actual developments and the regional differences in the food supply in the Danubian countries during World War II. For this purpose we must use nationwide totals as well as ratios—figures per head of the population. The development of the food supply will be shown in both aspects. The regional differences will be discussed only on the basis of per-head figures.

TOTAL NATIONAL FOOD SUPPLY

Great changes of state boundaries during World War II, especially the transfer of territories from Rumania to Hungary and back from Hungary to Rumania (Northern Transylvania), from Rumania to the USSR, back from the USSR to Rumania, and again from Rumania to the USSR (Bessarabia and Northern Bukovina), as well as from Yugoslavia to Hungary and back from Hungary to Yugoslavia (Bachka), disturb the picture of the developments in the individual Danubian countries. However, *the totals for the Lower Danube Basin in Table 17 show a downward tendency* throughout the war period. The harvest of food crops fell from 105,224 billion calories EMM per year in 1934–38 to 93,066 billion or 12 percent in the First War Triennium, and to 83,932 billion or 20 percent below prewar in the Second; that of bulky fodder first increased slightly from 42,567 billion calories ENA to 43,391 billion (2 percent) and then declined sharply to 32,465 billion (24 percent below prewar). The slight increase of the bulky-fodder harvest in the First War Triennium is due to the territorial expansion of Hungary at the expense of Czechoslovakia in 1938 and 1939.

It is important to mention that the decrease of the harvest during the war was brought about mainly by the general fall in the level

of physical yields per hectare, especially sharp in Yugoslavia (see Appendix Table XVI, p. 127). The total area sown for the Lower Danube Basin as a whole in 1942/43 was as large as in 1938/39 (29,439 thousand hectares as against 29,592 thousand hectares; see Table 18), which fact reflects the stability of the sowings since the total territory of the basin in those two years was almost the same. That sowings were carried through "normally" follows also from the small change in the total area sown as a percentage of the total state territory. Except in 1940/41 and 1944/45—the years in which the Lower Danube Basin was a theater of combat action—the percentage keeps almost the prewar level: 38 in 1939/40 and 39 in 1942/43 as against 39 in 1938/39. In 1944/45 the reduction of the sowings coincided with two other unfavorable events: the separation of Bessarabia from Rumania (for the second time during World War II) and a drop in the level of physical yields per hectare (the sharpest during the entire war period).[1]

The production discount excluding seed, i.e., the quantity of vegetal farm products used as fodder of draft animals on farms for basal metabolism and work in agriculture, followed the number of draft animals in its changes. Expressed in energy net for animals, it went up 6 percent during the First War Triennium and shrank 12 percent during the Second, as compared with prewar. The annual averages were 27,566 billion calories in 1934–38, 29,147 billion calories in 1940–42, and 24,362 billion calories in 1943–45. One cannot but wonder at how large a part of the total metabolizable energy produced is consumed by the working animals in the process of crop production.

As a result of smaller harvests the surplus of food crops (the effective food supply in the form of food crops) at the stage of crop production was considerably smaller during the war than during the prewar period: 81,265 billion calories EMM per year in 1940–42 and 72,883 billion in 1943–45 as against 93,239 billion in 1934–38. The surplus of bulky fodder (the effective food supply at the stage of crop production in the form of bulky fodder), which amounted to 15,001 billion calories ENA per year before the war, fell to 14,244 billion in the First War Triennium and dropped further to 8,103 billion in the Second War Triennium. That the unfavorable develop-

[1] Rumania, Yugoslavia, and Bulgaria suffered from drought in 1945. The effect for Rumania is not apparent in the average figures of physical yields for the Triennium 1943–45, because Rumania had very good harvests in 1943 and 1944. In 1946 Rumania, Yugoslavia, and Bulgaria were hit by another—still more severe—drought.

TABLE 18.—AREA SOWN AND AREA HARVESTED IN THE LOWER DANUBE BASIN DURING WORLD WAR II*

(Thousand hectares)

Crop-growing year	Hungary		Rumania		Yugoslavia	Bulgaria	Lower Danube Basin		
							Area sown		Corresponding state territory
	Area harvested	Area sown	Area harvested	Area sown	Area sown	Area sown	Absolute figures	Percent of state territory	
1937/38		5,507		13,104	7,154	3,601	29,366	40	73,881
1938/39	6,172	6,219	12,852		7,235	3,286	(29,592)[a]	39	75,074
1939/40	5,972	6,228	12,123		(7,266)	3,258	(28,875)[a]	38	76,280
1940/41	7,857	7,916	8,067		(6,487)[b]	3,766	(26,237)[a]	37	71,283
1941/42	7,938	8,028		(11,070)	—	3,761	—	—	76,277
1942/43	8,094	8,367		(11,339)	(5,964)	3,769	(29,439)	39	76,277
1943/44	—	—	—	—	—	3,640	—	—	76,277
1944/45	4,566	4,797		9,111	(5,499)	3,490	(22,897)	33	68,883

* Official enumeration data, or rough estimates (in parentheses). For sources as well as for definition of territory, see Territorial Scheme (Appendix C, note 1, p. 101) and Appendix Tables XX–XXIII (pp. 131–34). It should be pointed out that among the totals for the Lower Danube Basin only the figures for 1940/41 and 1944/45 are considerably affected by boundary changes.

[a] Rumania: area harvested.

[b] Very rough estimate: 7,266 thousand hectares, total area sown in 1939/40, minus 779 thousand hectares, area sown in Bachka, is taken. The figure 779 thousand hectares is obtained by subtracting from 788 thousand hectares, the arable land of Délvidék (see Table 4, p. 164), 9 thousand hectares, the half of the approximate figure on fallow in Vojvodina for 1938/39.

ment of the food supply extended over all the Danubian countries is confirmed by the corresponding per-head figures (see Table 21, p. 79). The fact that the total carryover of crop production for Hungary was larger in both war trienniums than in the prewar period is due to the transfer of territories from Czechoslovakia, Rumania, and Yugoslavia to Hungary in the years 1939, 1940, and 1941.

For the purpose of checking the results of the computation of the Trial Food-Energy Balance presented in Table 17, the requirements of the population for food of vegetable origin (vegetal farm products) according to a moderate standard of nutrition, as well as the basal metabolism requirements of the nondraft animals (sheep and pigs only) at their prewar level, have been computed.[2]

The estimates of the two kinds of food energy requirements are given in Table 19. Together with the net commercial food exports of the Danubian countries, they have been deducted from the carryover of crop production (as given in Table 17). This checking operation discloses a series of bulky-fodder deficits in Feed I and basal metabolism of nondraft farm animals (see Table 19, column 7) in ENA.

It is a *questio facti* whether such deficits have a merely formal character, i.e., reflect usual substitution of bulky fodder by concentrated fodder in the rations of farm animals for maintenance, work, and production of human food of animal origin, or are "real," i.e., indicate gaps in the feeding of livestock, which are filled at the expense of exports or human consumption or—being left unfilled—have resulted in decrease of live weight or work of draft animals.

Taken in conjunction with the decreasing surplus of food-crop energy, the negative magnitudes of Table 19 for the First and Second War Trienniums should be interpreted as "real" deficits.

During the years 1940–42 the gaps in the feeding of farm animals could still be covered at the expense of the commercial exports of food crops. In 1943–45, however, the surpluses of food crops were too small to be used for either exports or covering deficits in Feed I and basal metabolism of nondraft farm animals. Hence, if

[2] The requirement for food of vegetal origin is accepted as 85 percent of 2,625 and 2,557 calories EMM, total quantity of food available for consumption in a broad sense, i.e., effective supply at the stage of wholesale trade in nonprocessed and processed food, daily per head of rural and urban population in Bulgaria for 1934–38 and 1939–43, respectively. For Hungary 80 percent of the diet was taken. See Table 21 and the tabulation on page 82 for sources of data.

The requirement of nondraft animals is taken as 4,000 calories of net energy daily per metabolic livestock unit (i.e., 250-kg. cow).

TABLE 19.—CHECK OF THE COMPUTATION RESULTS PRESENTED IN TABLE 17, AVERAGES 1934–38, 1940–42, AND 1943–45 (ENERGY METABOLIZABLE FOR MAN [EMM] OR ENERGY NET FOR ANIMALS [ENA])

(American billions of large calories)

Country (state territory as defined in Appendix C, note 1)	Carryover of crop production—first part: food crops	Energy requirements for human consumption of vegetal products	Net commercial export of food commodities	Carryover of crop production—second part: bulky fodder	Energy requirements of nondraft animals for basal metabolism	Production of food of animal origin above maintenance; production discounts and wastes in food processing and food preparation; Feed III	
	EMM	EMM	EMM	ENA	ENA	EMM	ENA
	(1)	(2)	(3)	(4)	(5)	(6) = (1)−(2)−(3)	(7)[a] = (4)−(5)
				PREWAR PERIOD: 1934–38			
Hungary	20,878	6,873	1,944	777	1,542	12,061	— 765
Rumania	35,152	15,734	5,370	5,712	4,685	14,048	1,027
Yugoslavia	27,212	12,192	2,412	4,736	4,243	12,608	493
Bulgaria	9,997	5,012	902	3,776	2,959	4,083	817
Lower Danube Basin	93,239	39,811	10,628	15,001	13,429	42,800	1,572
				FIRST WAR TRIENNIUM: 1940–42			
Hungary	24,649	10,089	1,161	3,847	2,936	13,399	911
Rumania	23,049	13,424	1,430	3,615	4,012	8,195	— 397
Yugoslavia	25,672	11,718	471	2,567	3,346	13,483	— 779
Bulgaria	7,895	5,237	567	4,215	3,377	2,091	838
Lower Danube Basin	81,265	40,468	3,629	14,244	13,671	37,168	573
				SECOND WAR TRIENNIUM: 1943–45			
Hungary	24,203	9,471	732	1,286	2,308	14,000	—1,022
Rumania	25,218	13,301	324	2,950	3,189	11,593	— 239
Yugoslavia	16,151	11,186	300	1,145	2,091	4,665	— 946
Bulgaria	7,311	5,457	37	2,722	2,886	1,817	— 164
Lower Danube Basin	72,883	39,415	1,393	8,103	10,474	32,075	—2,371

[a] The negative figures show bulky-fodder deficits in Feed I and basal metabolism of nondraft farm animals.

the bulky-fodder situation in the First War Triennium is considered to be still a "normal" one, in which current needs and current supplies match, the increase of deficits and the decrease of surpluses of bulky fodder in Hungary and Bulgaria during the Second War Triennium mean that in these two countries stocks of concentrated and dry bulky fodder must have diminished and average live weight of farm animals (more precisely the average live weights in certain or all age groups of draft animals) must have decreased; in other words, the over-all production of meat, fat, and milk must have caused a loss in national energy-capital. For Yugoslavia this conclusion cannot be drawn, because here—while hay production played a role not less important than grazing—*density* of grazing farm animals decreased considerably (i.e., was not steady as was the case in the other Danubian countries); in that country a tremendous loss of energy capital occurred during the Second War Triennium in another way, namely by a great decrease in the number of livestock due to war destruction and emergency slaughtering. As for Rumania it seems that here the bulky-fodder situation did not worsen between the First and the Second War Trienniums; on the contrary, a slight decrease of the bulky-fodder deficit appears in the accounting analysis based on the three-year average (though not for 1945).

FOOD-ENERGY BALANCE FOR THE STAGE "WHOLESALE TRADE IN VEGETAL FARM PRODUCTS AND METABOLISM OF NONDRAFT FARM ANIMALS"

The additional information on the food situation which Table 19 contains and the relationships which it reveals enable us to go a step further in our analysis. We may now establish, again tentatively, the food-energy balance of the Lower Danube Basin for the next following supply stage embracing wholesale trade in vegetal farm products and metabolism of nondraft farm animals. Table 20 shows the result of such an attempt. The carryover of the balance presented there does not contain negative magnitudes: all deficits of bulky fodder, shown in Table 19, have been expressed in energy metabolizable for man and deducted from the carryover of food crops. It was possible to ascertain the food-energy equivalents of the bulky-fodder deficits and to simplify the balance, because in all cases in which deficits appear, it is known that the carry-in of bulky fodder has been consumed entirely at the new stage of supply, and that the deficit in the feeding of farm animals up to full maintenance could have been met by substituting grain for bulky fodder. The

TABLE 20.—TRIAL FOOD-ENERGY BALANCE OF THE LOWER DANUBE BASIN, AVERAGES 1934–38, 1940–42, AND 1943–45; WHOLESALE TRADE IN VEGETAL FARM PRODUCTS AND METABOLISM OF NONDRAFT FARM ANIMALS AS BASIC AND CLOSING STAGE (ENERGY METABOLIZABLE FOR MAN [EMM] OR ENERGY NET FOR ANIMALS [ENA])

(American billions of large calories)

Country (state territory as defined in Appendix C, note 1)	Carry-in = Carryover of crop production		Net commercial exports of vegetal foods	Energy requirements of nondraft animals for basal metabolism	Carryover*	
	Food crops	Bulky fodder				
	EMM	ENA	EMM	ENA	EMM	ENA
	(1)	(2)	(3)	(4)	(5)[a]=(1)−(3)	(6)[a]=(2)−(4)
			PREWAR PERIOD: 1934–38			
Hungary	20,878	777	1,895	1,542	17,438	—
Rumania	35,152	5,712	5,356	4,685	29,796	1,027
Yugoslavia	27,212	4,736	2,322	4,243	24,890	493
Bulgaria	9,997	3,776	867	2,959	9,130	817
Lower Danube Basin	93,239	15,001	10,440	13,429	81,254	2,337
			FIRST WAR TRIENNIUM: 1940–42			
Hungary	24,649	3,847	1,149	2,936	23,500	911
Rumania	23,049	3,615	1,424	4,012	20,823	—
Yugoslavia	25,672	2,567	471	3,346	23,627	—
Bulgaria	7,895	4,215	537	3,377	7,358	838
Lower Danube Basin	81,265	14,244	3,581	13,671	75,308	1,749
			SECOND WAR TRIENNIUM: 1943–45[b]			
Hungary	24,203	1,286	730	2,308	21,409[c]	—
Rumania	25,218	2,950	323	3,189	24,412[c]	—
Yugoslavia	16,151	1,145	303	2,091	13,937[c]	—
Bulgaria	7,311	2,722	34	2,886	6,946	—
Lower Danube Basin	72,883	8,103	1,390	10,474	66,704[c]	—

* Effective food supply at the stage "wholesale trade in vegetal products and metabolism of nondraft farm animals" = food available for domestic human consumption in the broadest sense (i.e., home consumption of vegetal farm products on farms; sales of vegetal farm products by wholesalers to food processors and retailers in the country; Feed II above maintenance only) and Feed III.

[a] The EMM equivalents of the negative amounts in the carryover of bulky fodder (the bulky fodder deficits; see Table 19, col. 7) have been deducted from the carryover of food crops.

[b] The decrease of stocks of concentrated and dry fodder, as well as losses in live weights (emaciation) of draft animals during the Second War Triennium in Hungary and Bulgaria are *not* taken into account. To that extent (probably about 1,000 American billion calories each) the carryovers of bulky fodder for those two countries are underestimated.

[c] Including "noncommercial exports," i.e., military seizures and fulfilled armistice obligations.

only thing that remains then to be done is to find out how much grain yields the energy net for animals represented by the deficit of bulky fodder and to subtract the energy metabolizable for man of that grain from the carryover of food crops. Looked upon as conversion of units of measurement, this means to multiply the deficit (expressed in energy net for animals) by the ratio of the two kinds of energy contents of grain. The only assumption, underlying in this case the conversion, concerns the proportion in which the different kinds of grain have been used as feed.[3]

In the balance presented in Table 20 only the net commercial exports of vegetal farm products and the requirements for basal metabolism of nondraft animals (factually sheep and pigs) appear as "outgoes." The carryover, i.e., the effective food supply at the stage "wholesale trade in vegetal farm products and metabolism of nondraft farm animals," can be defined as "food available for domestic human consumption in the broadest sense" plus Food III (vegetal farm products used as fodder on farms for animal work outside of agriculture). "Food available for domestic human consumption in the broadest sense" embraces home consumption of vegetal farm products on farms, sales of vegetal farm products by wholesalers to food processors and retailers in the country, and Feed II above maintenance (energy utilized in the production of food of animal origin).

The carryover in Table 20 allows us to examine the country-to-country differences in the level of actual food supply within the Lower Danube Basin. For this purpose we have to relate the food-energy stream to the population. The per-head figures we get and corresponding data, published in other studies on food conditions in that area during World War II and before, are given in Table 21.

FOOD SUPPLY PER HEAD OF THE POPULATION (FOOD SUPPLY LEVELS) DURING THE PREWAR PERIOD

At the combined stage "wholesale trade in vegetal farm products and metabolism of nondraft farm animals," that is to say, before entering the stages "wholesale trade in processed food and farm-animal food products," "retail trade in food," "food processing (for industry)," and "preparation of food for consumption (households)," the food-energy stream in the Danubian countries *during*

[3] The conversion coefficient applied in the construction of Table 21 is 2.02. This is the average ratio (simple arithmetic mean) of the energy metabolizable for man to the energy net for animals per kilogram of barley, corn, oats, rye, and wheat; the single ratios are: 1.901, 1.963, 2.449, 2.006, and 1.789 respectively (*2*, Table I; *3*, Appendix Table II).

the prewar period represented per head per day 5,328 calories EMM in Hungary, 4,226 calories EMM and 146 calories ENA in Rumania, 4,555 calories EMM and 90 calories ENA in Yugoslavia, and 4,065 calories EMM and 364 calories ENA in Bulgaria, or 4,505 calories EMM and 130 calories ENA in the Lower Danube Basin considered as a whole (see Table 21, cols. 5 and 6). These figures do not include energy derived from fruits and vegetables. In the present state of statistical information there are no appropriate data on the contribution of this source of food energy. However, the omission is not an important one. According to Motcheva and Dimitroff (*4*) the energy supply from fruits and vegetables (including melons and watermelons) in Bulgaria during the years 1939–43, after deduction of exports, amounted to 55 and 30 calories (EMM), respectively, per head of the population (midyear 1941), per day.[4] Differences in the fluctuations in harvests and exports were bound to alter the year-to-year ranking of the individual Danubian countries as to food supply at the stage of wholesale trade in vegetal farm products and metabolism of nondraft farm animals. However, Hungary tended to keep the first place. The further ranking would depend on the importance attached to the part of food energy consisting of energy net for animals. For example, at the rate of conversion 2, i.e., two calories EMM (derived from vegetal products) worth one calorie ENA, Yugoslavia and Bulgaria would come close together and leave Rumania behind. This discloses the liberal export policy of Rumania: during the years 1934–38 Rumania exported 15.2 percent of the carryover of crop production, as against 9.1 percent for Hungary, 8.7 percent for Bulgaria, and 8.5 percent for Yugoslavia (see Table 20).

With the food supply moving stage by stage toward human consumption, the per-head-per-day quantities become smaller; and the figures for the individual countries come closer to each other. At the stage of human consumption—after a large part of the food energy available for domestic human consumption, in the broadest sense (see carryover of Table 20), has been lost in transformation of matter in animal husbandry, food industries, and households—the differences at the national level almost disappear. This

[4] For Hungary and Yugoslavia, on the average for 1934–38, the Food and Agriculture Organization (*1*, pp. 67, 139) gives the following estimates (in calories EMM):

Item	Hungary	Yugoslavia
Fruits	64	38
Vegetables	31	42

TABLE 21.—EFFECTIVE FOOD-ENERGY SUPPLY PER HEAD OF THE POPULATION, AT THE STAGES OF SUPPLY INDICATED, IN THE DANUBIAN COUNTRIES AND THE UNITED STATES; YEARLY AVERAGES FOR THE PERIODS INDICATED*
(ENERGY METABOLIZABLE FOR MAN [EMM] OR ENERGY NET FOR ANIMALS [ENA])
(*In large calories per day*)

Country (state territory as defined in Appendix C, note 1)	Result of present study						Result of other studies			Population[a] (devisor to columns 1 to 5 and 7)
	Stage "Plant metabolism" (quantity harvested by man and animal)		Stage "Vegetal primary production" (crop production)		Stage "Wholesale trade in vegetal farm products and metabolism of nondraft farm animals"		Stage (*de facto*) Wholesale trade in processed and unprocessed food (exceptions noted)			
							FAO estimates	USDA estimates	Other estimates	
	EMM	ENA	EMM	ENA	EMM	ENA	EMM	EMM	EMM	(*Thousand*)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
					PREWAR PERIOD					
Hungary:										
1934–38	7,131	1,413	6,379	237	5,328	...	2,772			8,967
1938–39									2,768	
"Prewar"...								2,600		
Rumania:										
1934–38	5,674	2,393	4,843	810	4,226	146				19,319
"Prewar"...								2,750		
Yugoslavia:										
1934–38	5,530	2,492	4,980	867	4,555	90	3,024			14,970
"Prewar"...								2,700		
Bulgaria:										
1934–38	5,188	3,316	4,450	1,681	4,065	364				6,154
"Prewar"...								2,650		
1938/39									2,625[b]	

Lower Danube Basin: 1934–38	5,835	2,360	5,170	832	4,505	130			49,410
United States: 1935–39							3,148	3,240[b]	
1935–39								3,228[b]	
					FIRST WAR TRIENNIUM				
Hungary: 1940–42	5,600	2,628	4,998	780	4,765	185			13,512
Rumania: 1940–42	4,462	2,086	3,732	585	3,371	...			16,922
Yugoslavia: 1940–42	5,252	1,732	4,762	476	4,382	...			14,771
Bulgaria: 1940–42	3,970	3,406	3,277	1,749	3,054	348			6,601
Lower Danube Basin: 1940–42	4,922	2,295	4,298	753	3,983	92			51,806
United States: 1940–42								3,357[b]	
					SECOND WAR TRIENNIUM				
Hungary: 1943–45	5,851	1,911	5,227	278	4,624[c]	...			(12,685)
Hungary Trianon: 1945–46								1,733	
Rumania: 1943–45	4,823	1,869	4,121	482	3,989[c]	...			16,766
Yugoslavia: 1943–45	3,582	1,063	3,138	222	2,708[c]	...			(14,100)
Yugoslavia: 1945, 2d half.								2,295	
Bulgaria: 1943–45	3,542	2,671	2,912	1,084	2,766	...			6,879

TABLE 21 (*Concluded*)

(*In large calories per day*)

Country (state territory as defined in Appendix C, note 1)	Result of present study						Result of other studies			Population[a] (devisor to columns 1 to 5 and 7)
	Stage "Plant metabolism" (quantity harvested by man and animal)		Stage "Vegetal primary production" (crop production)		Stage "Wholesale trade in vegetal farm products and metabolism of nondraft farm animals"		Stage (*de facto*) Wholesale trade in processed and unprocessed food (exceptions noted)			
							FAO estimates	USDA estimates	Other estimates	
	EMM	ENA	EMM	ENA	EMM	ENA	EMM	EMM	EMM	(*Thousand*)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	SECOND WAR TRIENNIUM									
Lower Danube Basin: 1943–45	4,560	1,764	3,960	440	3,624[c]	...				(50,430)
United States: 1943–45									3,377[b]	

* Columns 1–6 based on data in preceding tables in this chapter.

Column 7 from FAO, *Food Balance Sheets* (Washington, 1949), pp. 67–72, 139–44, 162.

Column 8 from League of Nations, Econ. Fin., Transit Dept., *Food, Famine and Relief, 1940–1946* (Geneva, 1946), p. 84.

Column 9 from p. 196, this volume (Hungary); Christina Motcheva, "The Consumption of Food Products in the Bulgarian Rural Household," *Narodno Stopanstvo* (Bulgaria, Haute chambre d'économie nationale), March 1947, pp. 93–95; U.S. Dept. Agr., Bur. Agr. Econ., *Consumption of Food in the United States, 1909–48* (Misc. Pub. 691, August 1949), p. 123; Combined Food Bd., Special Joint Com., *Food Consumption Levels in the United States, Canada, and the United Kingdom* (U.S. Dept. Agr., War Food Admin., 1944), pp. 11, 22; UNRRA, Eur. Regional Off., Div. Operational Anal., *Agriculture and Food in Jugoslavia* (Operational Anal. Papers 23, London, 1947), p. 44.

Column 10 from Hungary, Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Évkönyv, 1941* (1943), p. 2; Rumania, Institutul Central de Statistică, *Anuarul Statistic al României, 1939 şi 1940* (1940), p. 41; Yugoslavia, Statistique générale d'état, *Annuaire statistique, 1940* (1941), p. 84; Bulgaria, Direction général de la statistique, *Annuaire statistique du Royaume de Bulgarie, 1942* (1942), p. 21; UN, Stat. Off. in Collaboration with Dept. Soc. Affairs, *Demographic Yearbook*, 1948 (Lake Success, 1949) pp.102–05.

[a] "Present-in-area population" plus armed forces of the country stationed abroad, but excluding armed forces of alien powers present in the country. War losses of Hungary, Rumania, and Yugoslavia (largest) are reflected in the official data used; only for Hungary and Yugoslavia for 1942, 1943, and 1944 did adjustments appear necessary.

[b] Stage, retail trade.

[c] Including "noncommercial exports," i.e., military seizures and fulfilled armistice obligations.

conclusion is suggested by the examination of the results of other studies on nutritional conditions in the Lower Danube Basin. Even at the stage of wholesale trade in processed and unprocessed food, at which account is taken of exports of processed food but actual consumption has not yet been reached, we find in 1934–38, per head per day, 2,772 calories for Hungary as against 3,024 calories for Yugoslavia, and, in 1938–39, 2,768 calories for Hungary (average for the two years) as against 2,625 calories in Bulgaria (for the accounting year).[5] Approaching human consumption Hungary

[5] The figure 3,024 calories EMM per head per day for Yugoslavia overshadows Hungary's 2,772 calories EMM. Both figures are published by FAO (*1*) and relate nominally to the stage of retail trade or actually to the stage of wholesale trade in processed food and nonprocessed food of animal origin in 1934–38. At the stage of wholesale trade in vegetal farm products and metabolism of nondraft farm animals the relation was the reverse (4,555 calories EMM plus 90 calories ENA as against 5,453 calories EMM). Such a shift could have occurred in two cases: (1) if the transformation of foods of vegetal origin (grain) into foods of animal origin was relatively much larger in Hungary than in Yugoslavia, and/or (2) if Hungary exported relatively more farm animal products or processed food of animal or vegetal origin than Yugoslavia.

A few more words should be said to explain what actually happened. From the stage "wholesale trade in vegetal farm products and metabolism of nondraft farm animals" to the stage "wholesale trade in processed foods and nonprocessed food of animal origin" the per-head-per-day figures dropped by 2,681 calories (5,453–2,772) in Hungary and by 1,531 (4,555–3,024) in Yugoslavia (if the 90 calories ENA are ignored). Hence the drop in Hungary exceeded by 1,150 calories that in Yugoslavia. Now the difference in the national per-head-per-day figures on supply of animal products at the "higher" or "later" stage, equal to 237 calories (Hungarians got especially more meat and fat), accounts for 470–940 calories of the excessive drop; the difference in the per-head-per-day figures on exports of animal products accounts for 100–200 calories, approximately. All figures mentioned above refer to energy metabolizable for man and to the prewar period, 1934–38.

At the upper limit the loss figures almost cover the excessive drop. Nevertheless it seems that the figure 3,024 for Yugoslavia is rather too high. A superficial check of the item "milk" (*1*, p. 143) shows that the estimate overstates the milk produced. It assumes an average yield of milk per cow of 1,335 liters per year (1935–37), whereas it is well known that in Bulgaria, where the productivity of the cows must be about the same as in Yugoslavia, 1,350 liters is considered as the maximal yield, and 825 liters as the average yield, before World War II (*4*, p. 5).

Other prewar figures on food supply in Hungary and Yugoslavia published by Walter Hahn (*5*, p. 19) and the Economic, Financial and Transit Department of the League of Nations (*6*, p. 84), respectively, are as follows (calories per head per day):

Source	Hungary	Yugoslavia
Hahn	2,533	2,610
League of Nations	2,700	2,600

Hahn mentions the Hungarian Institute for Economic Research as his source for Hungary, but says nothing about his source for Yugoslavia. The League of Nations publication refers to the U.S. Department of Agriculture. However, no reference as to year and stage of supply could be found in either case.

thus loses much or all of its advantage as to the quantity of the food-energy supply but it gets a diet of "higher quality" or, more precisely, a diet which is more palatable and more costly (both in the sense of food economy and exchange economy) than the other Danubian countries. Data on the amount of energy derived from food of animal origin, at the stage "wholesale trade in processed and unprocessed food," are provided by the food balance estimates of FAO (*1*) for Hungary and Yugoslavia, and by that of Motcheva and Dimitroff (*4*, p. 13) for Bulgaria, as follows (large calories EMM per head per day):

Country	Prewar: 1934–38		World War II: 1939–43		Postwar: 1947–48	
	Absolute amount	Percent of diet	Absolute amount	Percent of diet	Absolute amount	Percent of diet
Hungary	729	26.3			378	15.5
Yugoslavia	492	16.3			244	11.4
Bulgaria			401	14.5		

FOOD SUPPLY PER HEAD OF THE POPULATION (FOOD SUPPLY LEVELS) DURING THE WAR PERIOD

Reviewing the evidence for changes in the level of food supply *during the war period* presented by Table 21, we find at both supply stages—"crop production" as well as "wholesale trade in vegetal farm products and metabolism of nondraft farm animals"—*a general decline of the per-head figures in all four countries.* The decline is somewhat less pronounced at the latter stage because of the great decrease in the commercial exports.

The general decline can be seen still more clearly if the calorie values of ENA are ignored and the calorie values of EMM for the stage "wholesale trade in vegetal farm products and metabolism of nondraft farm animals" are shown in the form of index numbers (1934–38 = 100), as follows:

Country	1940–42	1943–45
Hungary	89	87
Rumania	80	94
Yugoslavia	96	59
Bulgaria	75	68
Lower Danube Basin.....	88	80

(Data from Table 21, column 5. Food-energy supply "on capital account"—i.e., at the expense of live weight of animals and stocks of fodder—not included. See p. 72.)

The most important quantitative conclusion which can be drawn from the above tabulation is that in the Lower Danube Basin as a whole—at the supply stage "wholesale trade in vegetal farm products and metabolism of nondraft farm animals"—the food supply per head of the population was 12 percent below the prewar level during the First War Triennium and 20 percent during the Second.

In the Second War Triennium Rumania provides an exception to the general downward movement: at the "higher" or "later" supply stage the prewar level is approached. But this is just a case in which a defect of the statistical material does not allow definite conclusions.

Many of the per-head figures of the present study for both war trienniums include noncommercial exports—quantities which were not available for domestic human consumption. The figures for Hungary may overstate the food supply to the extent of the deliveries of 25,000 metric tons of wheat from the province Bachka (*de facto* annexed by Hungary from Yugoslavia in 1941) to the German *Wehrmacht* during the year 1943 or 1944 (*7*, p. 28, note); it is not clear whether or not these exports were registered by the Hungarian foreign trade statistics (see Appendix Table XIII for Hungary, p. 228; *8*, pp. 187–88). The figures for Rumania include for 1941 gift packages from German soldiers to their relatives at home, and after August 1944 seizures made by the Russian occupation forces as well as fulfilled armistice obligations toward the USSR in 1944 and 1945 (pp. 265, 275). Rumania's share in the surpluses of agricultural production of Transnistria is not reflected by our data because the Rumanian government used the deliveries from this province, which was under Rumanian administration during the war, partly to feed the Rumanian army in Russia and partly for re-export to Western Europe. Adjustments made on the basis of unpublished data on Germany's foreign trade may justify the belief that the figures for Yugoslavia for the First War Triennium are cleared from the influence of exports through military channels (the deliveries for the Wehrmacht are included in the "commercial exports"; see Appendix Table XXIV, p. 135; *8*, pp. 162, 183–84; *7*). Yet there can be doubt whether the figures for Yugoslavia for the Second War Triennium are equally good: it is possible that at the end of 1944 or early in 1945 quite large quantities of wheat, potatoes, and sugar were delivered to Germany which are not considered by the adjustments mentioned above. Last, the figures for Bulgaria appear to be practically unaffected by noncom-

mercial exports, but they are influenced by other transactions not taken into account by our estimate. The transactions in question are shipments of grain within the Bulgarian economic territory during the war, i.e., shipments between the Kingdom and the territories occupied by Bulgarian armed forces in the southern half of the Balkan Peninsula, namely Western Thrace (Greek territory before World War II, under Bulgarian administration) and Macedonia (Yugoslav territory before World War II, with a sort of self-government during the war). During the crop year 1941/42 grain was exported from Bulgaria to Western Thrace to provide seed for the agricultural campaign and food for the population. Macedonia had in the next crop year a deficit covered again by Bulgaria. During the two following crop years, 1942/43 and 1943/44, Western Thrace contributed to the improvement of the food supply in Bulgaria with considerable quantities of grain and olive oil, not shown in the official statistics on production and trade (hence not appearing in our statistical tables), whereas Macedonia was self-sufficient in food.

It should be clear from what is said above that a *country-to-country comparison* of the level of food supply in the Lower Danube Basin during the war, based on the available data, would be fruitless, because it would yield doubtful results. However, it is not impossible to follow *the development* of the food position in the individual Danubian countries at that time. Supplemented by personal observations of the food economy, information about the factors determining nutrition, and the reactions of the governmental policy of food rationing to the changes in the conditions of demand and supply, Table 19 provides enough material to trace the main features of this development.

In *Hungary* the level of food supply went down gradually, but the worsening of the food situation was not felt until 1942. The territorial expansion of the country, the increase of Trianon Hungary to Enlarged Hungary, had a rather unfavorable effect upon nutritional conditions, since Northern Transylvania had lower yields per hectare than the old territory and, on the other hand, the surpluses of Bachka were not disposable for Hungary. Losses in livestock occurred not earlier than in 1945; areas left idle or devastated reached dangerous dimensions—about 20 percent of the total arable land—in the same year, when the battlefront passed over Hungary. During World War II, as during World War I, the main problem of the Hungarian food economy was victualing the capital, Budapest (in 1941 the population of greater Budapest reached 18.4 percent

of the total population of the country; this would correspond to a population of New York amounting to about 25 millions).

Rumania enjoyed the longest period of good times in nutrition among all Danubian countries—until the end of 1944 when the food situation deteriorated suddenly and sharply as a consequence of the war development. In 1943 and 1944 Rumania had very good harvests which brought the level of food supply up to its prewar position. Food rationing became symbolic and the rationing system was kept only to strengthen the bargaining position of Rumania in dealing with Germany whose demands for food were increasingly pressing. In spite of the blockade by the Western Allies Rumania even managed to import from Turkey, over the Black Sea, citrus fruits, dates, coffee, tea, spices, and other warm-climate products which during the war were missing in almost all other countries of Continental Europe. However, the actual level of food supply during the Second War Triennium was not as high as it appears from the figures of Table 21, columns 5 and 6, because they include military seizures by the Soviet occupation forces and fulfilled armistice obligations toward the USSR, i.e., quantities not available for domestic consumption. During 1945 and 1946 Rumania was obliged to feed the Soviet armies stationed in Hungary, Austria, and Czechoslovakia. In the same two years Rumanian agriculture was hit by drought, especially severe in 1946, and had to suffer heavy losses in draft animals exported to the USSR. Under the joint impact of forced exports, disorganization of the transportation system, and unfavorable weather conditions, the food situation became very bad in 1945. During the winter of 1946/47 it grew worse: Moldavia, the eastern part of Rumania, was struck by famine.

Food supply in *Yugoslavia* during the war passed through two distinct phases coinciding approximately with the two war triennums. However, more characteristic for its development were the great differences in nutritional conditions from region to region within the country. In this connection, it must be borne in mind that in 1941, after the German war campaign on the Balkan Peninsula, Yugoslavia was divided, broadly speaking, into three political and economic units: the sovereign but not independent state of Croatia, with a large part of its territory under Italian military occupation; the nonsovereign state of Serbia, with administration controlled by German authorities; and Macedonia occupied by Bulgarian armed forces. (These *de facto* divisions were, of course, not recognized by the Western Powers and the USSR.) Yugoslavia, as

created in 1918, consisted of two kinds of areas: provinces with food surplus and provinces with food deficit. The functioning of the Yugoslav national economy—though self-sufficient as a whole—was conditioned by the exchange of goods between its parts. The partition in 1941 meant almost full economic disintegration. Croatia, embracing the largest deficit regions (Bosnia and Herzegovina), was cut off from the granary of Yugoslavia—Vojvodina, consisting in the main of Bachka, annexed *de facto* by Hungary, and Banat, administrated by Serbia. Macedonia was incorporated in the food economy of Bulgaria (this does not mean that Macedonia is excluded from the territory to which the figures on Yugoslavia, given in this chapter, relate).

During the First War Triennium the decrease in the quantities harvested by man and animals from the level of prewar was almost fully offset by the decline of Yugoslav exports, which should be attributed to the disorganization of trade in Serbia. Within the new boundaries of Serbia agricultural production went on without serious disturbances. Only Croatia—including Dalmatia, Bosnia, and Herzegovina—suffered a lack of food supplies. There the bread and flour weekly ration for the normal consumer was reduced to 1,050 grams for the second half of 1942 and the first half of 1943 (*6*, p. 127). At the same time Banat had plenty.

During the Second War Triennium nutritional conditions deteriorated very much throughout the country. The accumulation of heavy losses in draft animals since 1940, the almost complete lack of fuel, and guerrilla activities—all these factors together brought about a considerable reduction from the area sown in 1939/40 (the contraction, which in 1942/43 was about 8 percent, reached 25 percent in 1944/45, measured on a constant territory, i.e., including Bachka; see Appendix Table XXII, p. 134). Falling physical yields and exports to Germany from Banat contributed further to the decrease of food supply (see note to Appendix Table XXIV, p. 135). As a result, food available for domestic consumption in the broadest sense (as defined on p. 76) decreased to 2,708 calories per head per day, i.e., it fell about 40 percent below the prewar level (1943–45 as against 1934–38 average; see Table 21). The new outbreak of the war on Yugoslav territory in 1944, which delayed the planting of the winter crops, and the drought of 1945 led to nutritional conditions approaching famine which necessitated relief by the United Nations Relief and Rehabilitation Administration (UNRRA) immediately after the liberation of the country. The shortage of food

was felt in spite of the considerable decrease of population. A. D. Bilimovich gives the following figures on indigenous food supply in three deficit provinces (calories per head per day, July-December 1945; see p. 349, this volume):

Bosnia and Herzegovina	1,923
Lika	1,658
Dalmatia	1,658
Average	1,746

It should be noted that the figure published by the Division of Operational Analysis of UNRRA (*9*, p. 44) for Yugoslavia for the second half of 1945, namely 2,295 calories per head per day, includes 565 calories energy content of imported food. The food supply from domestic production hence amounted to only 1,730 calories per head per day.

The development of food supply during the war in *Bulgaria* differs from that in any other Danubian country. The level of food supply suffered a drop from the prewar position as early as 1941, but then remained fairly stable. It was the bread crisis of the winter 1941/42—due to low grain harvest and relatively large exports—which first disturbed the prewar equilibrium in nutrition. Thanks to the richer supply of other kinds of food, the lack of bread was not felt too badly. During the Second War Triennium the bread supply improved but the rest of the diet, especially the fat sector, was impaired; the changes almost balanced.

The picture which emerges from the description of nutritional conditions in the Danubian countries is characterized by *decrease of food consumption, of commercial food exports, of livestock herds, and of average live weights of farm animals.* Common factors behind this development were—besides the already mentioned decline of agricultural production—permanent military mobilization and inflation.

Hungary and Rumania were engaged in the war campaign in Russia; Bulgaria maintained its army almost at full strength and increased the contingents of its obligatory labor service; in Yugoslavia the "army factor" was represented by the occupation and guerrilla forces. Since for the militarily mobilized part of the population the nutritional standard was relatively high and the diet, both in protein and energy, was never fully adjusted to the declining food production, *the quantity of food left for the urban and nonfood-producer rural population diminished even more than the quantity harvested or the quantity available for domestic human consumption.*

Inflation did not have an effect on nutritional conditions as a whole. However, it affected distribution of food: it acted against the poor, in so far as they did not produce their own food.

In concluding this General Survey of the agricultural economy of the Danubian countries, 1935–45, attention should be called to the close relationship between the food-energy supply at the stage of crop production and the gross return from agriculture in the Lower Danube Basin during the prewar period, if both magnitudes are related to the labor force in agriculture. This is revealed by Table 22.

Since all four countries are self-sufficient in food, such a relationship has a definite meaning: a more abundant food-energy supply corresponds to a larger exchange value of gross output of agriculture. This should be expected, for we attribute exchange value to food commodities according to their nutritive value and, on the other hand, the disturbing effect of differences in the purchasing power of money is more or less eliminated by the adjustment of the exchange rate of the national currencies (see chap. 2).

The country-to-country differences in food-energy supply, at the stage of crop production, per head of agricultural labor force, are due to the action of many factors, yet all of them act through the following ratios: cropland per head of agricultural labor force, physical yields of food crops per hectare, and average caloric content of food crops harvested (energy metabolizable for man per quintal).

The main reason why food-energy supply as specified above was much higher in Hungary than in the other Danubian countries (in spite of the fact that the amount of EMM per quintal of food crops harvested was in Hungary the smallest) is that the Hungarian farmer—on the average—was provided with twice as much cropland as the farmers in the rest of the Lower Danube Basin; in addition to that, Hungary's physical yields per hectare were the highest (see Appendix Table XVI, p. 127). On the other hand, the small advantage which Rumania had in cropland per head of agricultural labor force, as compared with Yugoslavia and Bulgaria, proved to be too small to make up for the difference in the physical yields of food crops, of which Rumania's were the lowest. In Bulgaria scarcity of cropland was compensated (up to the level in Rumania and Yugoslavia) by higher physical yields per hectare and higher average calorie content of food crop harvested.

Table 22 is important also in another respect. It shows that the results arrived at in this chapter are in agreement with the findings in chapter 2.

TABLE 22.—GROSS RETURN FROM AGRICULTURE AND EFFECTIVE FOOD-ENERGY SUPPLY AT THE STAGE OF CROP PRODUCTION IN THE DANUBIAN COUNTRIES BEFORE WORLD WAR II, PER HEAD OF AGRICULTURAL LABOR FORCE*

Country	Gross return from agriculture (1938) per head of agricultural labor force (1938) per year (*dollars*)	Effective food-energy supply at the stage of crop production (1934–38 average) per head of agricultural labor force (1938), per day (*large calories*)		Cropland per head of agricultural labor force (1938) (*hectares*)	Average calorie content of food crops harvested (1934–38 average), energy metabolizable for man, per quintal (*1,000 large calories*)	Degree of self-sufficiency in food (around 1937), at the level of living of each country (*percent*)
		EMM	ENA			
	(1)	(2)	(3)	(4)	(5)	(6)
Hungary	176.2[a]	9,980	468	3.15	250	121
Rumania	66.7	3,939	640	1.83	291	110
Yugoslavia	77.9[b]	4,815	838	1.78	289	105
Bulgaria	77.6	3,521	1,330	1.61	320	106

* Sources: Columns 1 and 4 from Table 3, p. 19; columns 2 and 3 based on Table 1, p. 11, and Table 19, p. 73; column 5 based on Appendix Tables VII–X, pp. 118–21, and Table 17, p. 66; column 6 from Institut für Konjunkturforschung, *Wochenbericht* (Berlin), Feb. 2, 1939, p. 22.

In reading this table one should observe (1) that the exchange value (price in terms of money) of a given amount of energy net for animals is higher than the exchange value of the same amount of energy metabolizable for man derived from the same kind of vegetal product, and (2) that nonfood products (e.g., tobacco) are in Bulgaria a more important item of agricultural output than in the other Danubian countries.

[a] 1938/39.

[b] Average of 1938 and 1939.

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APPENDIX NOTES AND TABLES

APPENDIX A: NOTES TO CHAPTER 2

1. METHODOLOGICAL NOTE, ESPECIALLY TO TABLE 2

Exchange rates.—The actual rates of exchange, expressed in U.S. cents, were: for 1938, pengö (Hungary) 19.6, leu (Rumania) .58, dinar (Yugoslavia) 1.84, lev (Bulgaria) .884; for 1939, pengö 18.7, leu .56, dinar 1.82, lev .877. For the pengö and the lev the actual exchange rates were established on the basis of the official rates, taking into account the official premiums paid in full transactions (Hungary) or in private compensation deals (Bulgaria). The actual exchange rate of the leu has been ascertained over the lev, i.e., multiplying the official quotations of the leu in Sofia in leva by the value of the lev in cents. The actual exchange rate of the dinar is based on free-market quotations in Belgrade. By "adjusted exchange rates" is to be understood the actual rates reduced for international purchasing-power disparity of the currencies with respect to agricultural products, i.e., for price disparity in agriculture between the Danubian countries and the United States. The purpose and the method of adjustment are explained in the text (pp. 14 ff.). The adjusted rates, expressed in U.S. cents are: pengö, 14.4 for 1939, applied for the whole period 1938/39–1939/40; leu, equal to the actual rates; dinar, 1.67 for 1938 and 1.52 for 1939; lev, .69 for 1938 and .675 for 1939. The net national product is not converted at adjusted rates because the adjustment is confined to value figures concerning agriculture.

Gross return from agriculture in national currency.—The figures for *Hungary* relate to the accounting years 1938/39 and 1939/40, beginning July 1. They are obtained by dividing the figures for net product of agriculture (related to the same periods) by the average quota of net product in agriculture according to data of *Farm Accountancy Statistics* (*1*) for the accounting year 1939/40 (see the last column of the table). For the period 1933/34–1936/37 a much lower figure of net-product quota, namely .56, results from the study of M. Matolcsy and S. Varga (*2*), due evidently to the very broad concept of gross value of agricultural output which they use (domestic fodder consumed on the farms producing it is not deducted).

For *Rumania*, products of the gross return per hectare of land in farms—data of *Farm Accountancy Statistics* in national currency, averages for two successive accounting years—and the agricultural area (official figures corrected; see below) have been computed.

The figure for *Yugoslavia* is a rough estimate arrived at by multiplying 43.8 dollars gross return per hectare of cropland and 10,110 thousand hectares of cropland. The method of estimation of the gross return per hectare is explained in the note to Table 3 (see p. 19).

For *Bulgaria*, the earliest year covered by an official estimate of the Central Statistical Office is 1939. Gross return in agriculture in 1938 is estab-

lished on the basis of the official figure for 1939 in proportion to figures 35.1 and 39.8 billion leva computed by the Haute chambre d'économie nationale in Sofia as gross value of crop and animal production in 1938 and 1939.

Gross return from agriculture for the *United States* is equal to "gross farm income" less "government payments" to farmers (for the purpose of agricultural conservation, income parity, and other programs) and "rental value" of farm dwellings.

Net product of agriculture in national currency.—The figures for Hungary and the United States, as well as for Yugoslavia for 1938 and Bulgaria for 1939, are official estimates.

For *Rumania*, the net product of agriculture has been found in the same way as the gross return from agriculture. The following data are used for both estimates: agricultural land in 1,000 hectares—19,571 in 1938 and 18,746 in 1939; net product per hectare in lei—4,501 in 1938 and 4,555 in 1939; gross return per hectare in lei—5,246 in 1938 and 5,391 in 1939. The net product per hectare for 1938 is the average of 4,079 (1938/39 figure, to be found in *1*, p. 79) and 4,923 (1937/38 figure, calculated from the publication of the FAS according to the definitions given there). The agricultural land in 1939 is established by adding the area of pastures in 1937/38—3,260 thousand hectares—to the official figure for cropland in the crop year 1938/39—15,486 thousand hectares, the sum of arable land including fallow plus permanent meadows plus vineyards and orchards.

The net product of agriculture for *Yugoslavia* for 1939 has been computed by extrapolation: the official figure for 1938 has been increased by 4 percent, in proportion to the average change of the quantities produced only, as there is no reason to assume that the general level of net product per unit of output in agriculture changed from 1938 to 1939. For this purpose a special quantity index of crop production (1938 = 100) has been computed according to Laspeyres' formula. The commodity aggregate of the index embraces wheat, rye, barley, maize, dry beans, potatoes, hay, prunes, and tobacco. Quantity data are taken from the official crop statistics, except for tobacco for which data of the state monopolies administration are used. Price data are averages of the prices at the commodity exchanges in the country, except the data for prunes and tobacco, which are values per quintal exported.

The net product of agriculture for *Bulgaria* for 1938 is established on the basis of the estimate of the Central Statistical Office for 1939, in proportion to the figures 18.97 and 20.49 billion leva computed by the Haute chambre d'économie nationale in Sofia as net value of crop and animal production in 1938 and 1939.

The figures for Bulgaria refer to the contribution of agriculture to the "national income derived from production in a broad sense," whereas the figures for Rumania (being based on *Farm Accountancy Statistics*), Yugoslavia, and Hungary are built up on the concept of "national income derived from production in a narrow sense." When national income is thought of as derived from production in a broad sense, the state is considered as a sector of production (as a group of production units) and government services are included in the list of products of the system. Taxes paid by other production units (e.g., farms) should then be fully or partially excluded from their net

product as payments against government services. When the concept of "national income derived from production in a narrow sense" is used, the state is regarded as an ultimate consumer: government services are no longer "products" of the production system, and taxes paid by the units of the system are to be treated as a "distributive share," i.e., as a part of the net product of the farms, the industrial enterprises, etc. It is important to note that in earlier computations of national income for Rumania the state was considered as a sector of production (see *3*, pp. 163, 165–66). In *Farm Accountancy Statistics, 1930–31* (*4*, p. 347), "social income" is defined as follows:

> The social income can be computed by adding together the net return on agricultural assets, a fair wage claim for the unpaid labor of the operator and his family, the wages paid to employees (including board), and the taxes. The social income is the totality of the incomes of the farming enterprise which goes to the employees, to the creditors, and also to the State.

There is no evidence in the statistical sources used that, in the Bulgarian official computations of national income, taxes paid by farmers are excluded from the net product of agriculture. However, the tables on "national income by industrial origin" in the sources contain government services.

On Yugoslavia's national income for 1926, 1931, 1935, and 1936 see *5*; *6*, p. 485.

The formula of the quantity index constructed by Moore (*7*, pp. 29–34, 145–81) may be written, for m countries and n agricultural products, as

$$\frac{\sum_{1}^{n} aq_k}{\sum_{1}^{n} aq_i} = \sum_{1}^{n} \frac{aq_i}{\sum_{1}^{n} aq_i} \cdot \frac{q_k}{q_i},$$

where the subscript k denotes any given country and the subscript i any other country which might be chosen as the base country of the comparison. The magnitude a, the so-called "modal-value ratio" for any agricultural product, is constant from country to country. It is the mode in the array of m national product price—crop-basket price—ratios for the given product. For the agricultural product j it will be the mode of the series

$$\frac{\text{Price of product } j \text{ in country 1 in national currency}}{\text{Crop-basket price in country 1 in national currency}}, \quad \frac{\text{Price of product } j \text{ in country 2 in national currency}}{\text{Crop-basket price in country 2 in national currency}}, \quad \ldots \quad \frac{\text{Price of product } j \text{ in country } m \text{ in national currency}}{\text{Crop-basket price in country } m \text{ in national currency}}.$$

The crop-basket price in any country is equal to the sum of a certain number of kilograms of certain commodities at the commodity price in that country in national currency, as follows: wheat 16, rye 9, barley 6, oats 10, corn 6, and potatoes 53.

The physical "weights" of the crop-basket price (16 kilograms, 9 kilograms, etc.) should not be confused with the statistical "weights" of the

index, $a^{(1)}q_i^{(1)}$, $a^{(2)}q_i^{(2)}$ . . . $a^{(n)}q_i^{(n)}$. The expression "agricultural production of country . . . in crop units" relates to $\sum_1^n aq_1$, $\sum_1^n aq_2$ . . . $\sum_1^n aq_m$, respectively, and has only a conventional meaning: it should not be taken literally.

The Kozlik-Moore method overcomes, in a more discreet way than the method of the present survey, the logical difficulties arising out of the purchasing-power disparity of national currencies. Yet the results it arrives at are not less indeterminate than the results of any other version of the quantity-index method, owing to the differences in the national price systems (national "price structures").

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APPENDIX B: NOTES TO CHAPTER 3

1. ON THE TCHIFLIK SYSTEM

The share the Christian peasants had in the freehold of farmland varied from province to province considerably. In Macedonia around 1900 only about one-fourth of the arable land was owned by Christian peasants; Christian peasant farms in freehold generally did not exceed 200 dulums or 24 hectares (1 dulum = 1,200 square meters, approximately) and farms of serfs contained 60 to 100 dulums or 7 to 12 hectares (*1*, pp. 49–56). Judging by the data of the Austro-Hungarian census of 1910 on the occupation of population in relation to property of land, in Bosnia and Herzegovina Christian peasants owned only a small part of the arable land (*2*, pp. 117–18). On the other hand, in the provinces constituting Bulgaria of today (with exception of the districts of Sofia, Küstendil, Burgas, and Dobrich), and in Serbia—toward the beginning of the eighteenth century—the percentage of arable land owned by Christian peasants must have been greater than that owned by Moslems.

The Tchiflik System, which was the prevailing system of land exploitation in Macedonia, Bosnia, and Herzegovina during the nineteenth century, may be described briefly. For the larger part of the tchiflik land the tchiflik owner was only landlord; the peasants, the tillers of the soil, were tenants, either by virtue of custom law (serfs) or by written or verbal contract (contract tenants, *kessimji*). The rest of the tchiflik land represented a farm operated by the tchiflik owner or by a manager.

The tchiflik owner lived on the tchiflik or in the neighboring town. He had the title of *bey* (when the tchiflik was large) or *aga* (when the tchiflik was small). The title was a remnant from the Spahilik System and had nothing to do with the actual juridic status or economic function of the bearer. The part of the harvest received by the tchiflik owner from the tenants varied from one-fourth to one-half after deduction of the dime. In Bosnia and Herzegovina the predominant "rent rate" was one-third (*2*, p. 34; *3*, p. 315); in Macedonia, for both serfs and contract tenants, it was one-half (*1*, p. 50).

Labor for the farm of the tchiflik owner was supplied mainly by serfs or contract tenants and, in addition, by "farm hands" (*momtzi, ratayi*). Farm hands, i.e., long-term contract laborers, were landless peasants who, unlike the tenants, did not possess draft animals and farm implements. In Macedonia, not only the serfs but also the contract tenants were obliged to work on the landlord farm without remuneration, i.e., to corvée (*1*, p. 63). Economic conditions for "free tenants" (contract tenants) working on tchifliks and for serfs were essentially the same: the tenancy contracts contained as a rule serfdom clauses. Hence "serf labor" and "coercive labor" existed at the same time and often in the same tchiflik.

The foregoing description of a tchiflik applies to a tchiflik on *mirié* or *mulk* land embracing many tenant farms and a landlord farm. However, very often the tchiflik owner himself did not cultivate land, i.e., there was no landlord farm and all land of the tchiflik was cultivated by tenants. Thus "Gutsherrschaft" and "Grundherrschaft" existed simultaneously.

In economic history the term "tchiflik" corresponds—even under certain conditions—to the German "Gut," or the English "manor." It is a corrupt form of the Turkish word "tchiftlik" which designates *farm in general.* Hence in using the expression "Tchiflik System" to designate a historic phenomenon the Slavic people under Turkish rule changed the spelling and narrowed the meaning of the respective Turkish word. Besides the personal observations of the author, the following quotations may serve to prove this:

> Sredni i veliki posedi zvali su se *tchiflutzi* ili beglutzi. Njchovi sopstvenitzi su se zvali begove, age, spahije i sajbije. Oni nisy nisy radili svoju zemlju, vetch su jeobratchivali chrishtchani, koji su se zvali "*tchiftchije.*" (*4*, p. 524)
>
> Les possessions d'un tel usurpateur s'appelaient "*čitluk*" ou "*čiflik,*" ou encore, suivant l'expression populaire, "*agaluk.*" (*5*, p. 86)
>
> C'était de cette manière qu'un village perdait tous ses droits et devenait ce qu'on appelait "*tchiflik,*" et les habitants, de libres et propriétaires qu'ils étaient, se voyaient réduits à l'état de misérables serfs, attachés à la glèbe . . . (*6*, p. 115).
>
> Cette loi ("Loi sur l'amélioration de l'état de la population agricole habitant les terres des tchifliks" du décembre 1880) . . . vise directment a urachat des grandes propriétés foncières et à leur partage entre les populations qui y travaille. Son article 3 déclare propriétaire des terres qu'elle a cultivées, toute personne habitant dans les limites d'un *tchiflik.* (*7*, p. 55)

Ces données . . . concernant des métayers qui représentent les troisième et quatrième générations d'une famille qui, il a plus de cent ans, c'est fixée dans le tchiflik bien connu de "Bardovtzi," près d'Uscub, et depuis cultivé les mêmes champs. (*1*, p. 56)

In Macedonia, the peasant who worked as a tenant (not as day laborer or farm hand) was called *tchiftchia* (plural: *tchiftchii*, Bulgarian; čifčie, Serbian), derived from the Turkish word "tchift" (of Arabic origin; *8*, p. 854) meaning "pair" or "couple" and referring to a span of oxen.[1] In Serbia, Bosnia, and Herzegovina he was called *kmet* (plural: *kmeti*).

For further reading on this subject see *10*, No. 20, p. 85, and No. 21, p. 66; *11*, pp 21–22; *12*, p. 41; *13*.

2. ON THE TANZIMAT

The Hatti Sherif of Gülhané (November 3, 1839) promised a new military system, a new fiscal system, security of life, fortune and honor, equality before the law, and measures against corruption in administration. The second rescript of Abdul Mejid—the Hatti Humayun (February 18, 1856)—had more the form and content of a Bill of Rights. It confirmed what was declared in the first, proclaimed freedom of religion and outlined a reform of jurisdiction. Of all that, only the freedom of religion was realized.

The Land Property Act (Erazi Kanunnamesi) of April 21/May 2, 1858, the so-called "Ramazan Act" (being issued on 7th Ramazan 1274, according to the Mohammedan calendar), which followed the Hatti Humayan, was still based on the old Osmanic-Moslem agrarian principles and not on Western European, as could be expected. It defined the judicial categories of land discussed on page 34, and contained regulations on the utilization of land (for transformation of arable land into orchards, of pasture into cropland, etc., special permission of the administrative authorities was required). According to the act the possession of mirié land—the category to which most land of the tchifliks belonged—was a hereditary usufruct of a principally indivisible estate, i.e., a sort of entail of possession (not of property). This right was established by a document called *tapú* (Slavic derivation: *tapýa*). During the time when the Spahilik System existed (before 1826) the exploitation of mirié land rested on a double lease—from the Sultan to the spahi, and from the spahi to the peasant. At that time the tapú was given to the peasants by the spahis. The Land Property Act of 1858 provided that henceforth the tapú should be issued by organs of the state.[2] It is this fact—the depriving of the former spahis of the right to issue the tapú—which gives some authors (e.g., Sax) the reason to think that the Spahilik System was abolished by the Land Property Act of 1858 (and not by the reform of Mahmed II of May 29, 1826, after which date no more timars were given). On the Land Property Act of 1858 see *3*, pp. 358–59; *9*, pp. 140–41; *14*, Vol. I, 206–08; *7*, pp. 43–45; *5*, pp. 94–95.

[1] By the legislation underlying the Yugoslav agrarian reform of 1919, contract tenants on tchifliks were not considered as "čifčie," i.e., the term was applied only to serfs (*9*, p. 211).

[2] Carl Ritter von Sax mentions a special Tapú Act of 1859 on the formalities of issuing of tapús.

3. ON THE ROMAN COLONATE

Originally the Roman *coloni* were free tenants; *colonate* meant long-term free tenancy, and *emphyteusis* meant hereditary colonate. As late as A.D. 244 landlords were forbidden to force tenants to stay on their estates. However, in the fourth century the coloni were tied to the soil. Two kinds of coloni were distinguished at that time: *coloni adscripti*, or simply *adscripti*, whose status corresponded to that of the medieval serfs, and the so-called *coloni liberi*, who were also bound to the land but were not obliged to work on the *mansus dominiens* (the farm of the landlord). In Roman law the term "serf" (*servus*) designated slave. On the ancient colonate see *15*, p. 557; *16*, p. 639; *17*, p. 667; *18*, p. 472.

4. RECENT DATA ON COLLECTIVE FARMS

On the more recent development of collective farms in the Danubian countries the following data as to their number are all that can be given (figures are for December unless otherwise indicated):

Country	1950[a]	1951	1952	1953
Hungary	1,500[b]	...	5,315[c]	4,677[d]
Rumania	1,029	1,100[e]	1,400[e f]	1,980[f]
Yugoslavia	6,988	6,948[g]	6,106[f g]	...
Bulgaria	2,568	2,738[h]	2,739[d]	2,747[i]

[a] Data from Table 15, p. 60.

[b] December 1949.

[c] From speech by M. Rákosi, Dec. 15, 1952, reprint from *Hungarian Bulletin* (no date or place given).

[d] From Free Europe Committee, Inc., Research Staff of Free Europe Press, *Satellite Agriculture in Crisis: A Study of Land Policy in the Soviet Sphere* (New York, 1954), pp. 64, 68, 70.

[e] From United Nations, *Economic Survey of Europe Since the War* (Geneva, 1953), p. 179.

[f] June.

[g] From Yugoslavia, Savesni Zavod za Statistiku i Evidenciju, *Indeks*, November 1952, p. 40, note (for 1951), and February 1953, p. 43 (for 1952).

[h] From U. Popoff, "The Socialistic Transformation of Agriculture in Bulgaria," *Sotsialisticheskoe Selskoe Khozyaistvo* (Moscow), March 1952.

[i] From *Zemedelsko Zname* (Sofia), Dec. 4, 1953.

The above figures suggest that since 1950 only in Hungary has substantial progress been made; in Yugoslavia the number of collective farms slightly decreased.

According to "Hungarian Production Results for 1951" (*The Hungarian News and Information Service*, London, January 1952) the area of collective ("co-operative") farms increased during 1951 to 1,027,000 hectares (by 120 percent), and the area of state farms to 610,000 hectares (29 percent). This means that the socialized sector of agriculture—collective and state farms taken together—advanced to almost 25 percent of the country's cropland. The "Hungarian Production Results for 1952" (*ibid.*, January 1953) states that by the end of 1952 the socialized sector had reached 37 percent of the total "tillage area."

5. POPULATION PRESSURE, 1880–1948

From the accompanying table one can draw conclusions as to the pressure which the growth of population has exercised during the last 70 years upon agrarian conditions in the Lower Danube Basin as a whole. From around 1880 to 1948, while the total population grew by 65 percent, the cropland

TOTAL POPULATION, AGRICULTURAL POPULATION, CROPLAND, AND ARABLE LAND IN THE LOWER DANUBE BASIN, AROUND 1880 TO 1948*

Year	Total population	Agricultural population[a]	Cropland[b]	Arable land[c]
	(Thousand persons)		*(Thousand hectares)*	
In or around 1880	29,038	22,400	28,661	21,802
1948 (land: in or around 1948)	47,913	33,138	31,794	25,735
Index Numbers (1880 = 100)	*165*	*148*	*111*	*118*
		(Hectares per head of population)		
In or around 1880			.99	.75
1948 (land: in or around 1948)			.66	.54
		(Hectares per head of agricultural population)		
In or around 1880			1.28	.97
1948 (land: in or around 1948)			.99	.80

* Sources of basic data. *Total population around 1880.*—Kingdom of Hungary including the "Frontier (1880)," *19*, p. 11; Wallachia and Moldavia (1880), *20*, p. 41; Bukovina (1880), Dalmatia (1880), Serbia (1880), Bosnia and Herzegovina (1879), Montenegro (1879), *21*, pp. 20, 325, 401; Macedonia (1888–95; present Yugoslav and Bulgarian parts), *22*, pp. 281-83; Kossovo and Metohia districts (1894–95), *23*, Vol. 34, p. 225; Bulgaria (1880), *24*, p. 21.

Total population 1948.—*25*, pp. 99–101.

Agricultural population (percentages) around 1880.—Kingdom of Hungary (1890), *26*, p. 40; Wallachia and Moldavia (1899), *27*, p. 23; Bukovina, Dalmatia, Carniola (1910), *28*, p. 12; Serbia (1895), *23*, Vol. 29, p. 593; Bosnia and Herzegovina (1895), *2*, p. 3; Montenegro (?), *29*, p. 352; Macedonia (1900), *30*, p. 751; Kossovo and Metohia districts (1900), percentage for Macedonia accepted; Bulgaria (1887), *24*, p. 20.

Agricultural population (percentages) 1948.—Total population 1948 times percentages in Table 1, p. 11.

Land around 1880.—Kingdom of Hungary including the "Frontier" (average 1860 approx., and 1911), *31*, pp. 104–05, and *19*, p. 76; Wallachia and Moldavia (average 1862 and 1902), *32*, p. 13, and *27*, p. 139; Bukovina, Dalmatia, Carniola (1860 approx.), *31*, pp. 104–05; Serbia (1900), *33*; Bosnia and Herzegovina (1886), *2*, p. 3; Montenegro (1892 approx.), *23*, Vol. 38, p. 613; Macedonia (1911), total territory, *30*, p. 751, percentage of cropland, *8*, p. 819; Kossovo and Metohia districts (1911), total territory measured from map, percentage of cropland from *8*, p. 819; Bulgaria (1896/97), *24*, p. 254.

Land around 1948.—Appendix Tables XX–XXIII, pp. 131–34.

All data refer to the area which comprised the actual state territories of Hungary, Rumania, Yugoslavia, and Bulgaria in 1948 (fortunately in this year *de facto* and *de jure* boundaries coincide). The totals for 1880 were established by adding together the figures for the countries representing then the core of the present Danubian countries and the figures for the provinces which in the past were parts of other states but now belong to the Danubian countries. The effect of the discrepancy between the total territories considered for 1880 and 1948 on population, i.e., the error in the estimate of population, does not exceed 1 percent. The 1880 territory includes Northern Bukovina and Subcarpathian Ruthenia, now parts of the USSR and Czechoslovakia, but does not contain the Istrian Peninsula and Southern Styria—border strips of present Yugoslavia.

[a] Population directly dependent on agriculture.

[b] Cropland is equal to arable land plus area of multiennial cultures (i.e., orchards and vineyards, "tree and bush crops") and permanent meadows.

[c] Arable land is equal to area sown plus fallow land.

increased only by 11 percent. As a consequence, the area from which the agricultural population, i.e., the population directly dependent on agriculture, derives its food and income (excluding forests and pastures), decreased from 1.28 to 0.99 hectares per person. Cropland seems to have ceased to expand in Hungary about 1920 (or even earlier), in Bulgaria about 1930, in Rumania about 1935, and in Yugoslavia about 1940. Boundary changes in all cases are taken into consideration.

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APPENDIX C: NOTES TO CHAPTER 4

A large group of statistical tables serves as documentation to the items of the balance. The conditions for the validity of the data are explained below.

1. TERRITORIAL SCHEME

From a technical point of view the most difficult problem in using and presenting statistical material on agriculture for the Danubian countries consists in the avoiding of overlappings and gaps that result from the many changes of state boundaries within the Lower Danube Basin during the period 1938–47 and, in addition to that, from the lack of uniformity in the space-adherence principle adopted by the official agencies producing the statistical data. Unless otherwise stated, the data in all tables in chapter 4 and Appendix Tables VII–XXIV, pages 118–34, refer to territories defined and named in the accompanying scheme.

The space-adherence principle followed in the present study is that adopted by Hungarian and Bulgarian statistics of agricultural production. It consists in including the territory of the province transferred in the statistical territory of the gaining country for the following crop year.

Rumanian statistics of agricultural production have followed another principle: to include (exclude) the territory of the province transferred in the statistical territory of the gaining (losing) country for the same crop year.

For example, Southern Dobruja, which was transferred from Rumania to Bulgaria in September 1940, disappears from Rumanian agricultural statistics as early as the crop year 1939/40, but does not appear in Bulgarian agricultural statistics until the crop year 1940/41. Thus the agricultural production of Southern Dobruja for 1939/40 is not shown by any country. In view of this fact the figures for Rumania for 1939/40 in our statistical tables have been adjusted for Southern Dobruja, i.e., augmented.

It follows from what is said above that the figures for Hungary and Bulgaria could be used as they were. No territorial adjustments have been made, not even in the case of the "Southern Region" by Hungary in 1941, the region called Délvidék in Hungarian, which is identical with the Yugoslav Bachka and the Yugoslav part of Baranya. In this case the space-adherence principle of "next-year-registration" was violated by the Hungarian Central Statistical Office (perhaps because the territorial change occurred early in the year).

TERRITORIAL SCHEME OF THE DANUBIAN COUNTRIES USED IN CHAPTER 4: TERRITORY TO WHICH THE STATISTICAL DATA OF THE TABLES (NOT OF THE SOURCES) REFER

Year	Hungary *De facto* state territory	Rumania[a] *De facto* state territory	Yugoslavia *De jure* state territory except toward Hungary 1941–44	Bulgaria *De jure* state territory	Lower Danube Basin Combined state territories
1938	Trianon (1919)	Versailles (1919) =71 departments	Foundation (1918)	Neuilly (1919)	Prewar
1939	Trianon plus Upper Region (Enlarged I)	Versailles = 71 departments	Foundation	Neuilly	Prewar plus Upper Region (Hungary)
1940	Trianon plus Upper Region and Subcarpathian Ruthenia (Enlarged II)	Versailles = 71 departments	Foundation	Neuilly	Prewar plus Upper Region and Subcarpathian Ruthenia (Hungary)
1941	Trianon plus Upper Region, Subcarpathian Ruthenia, Northern Transylvania, Southern Region (Bachka and southern Baranya[b]) (Enlarged IV)	Versailles less Southern Dobruja, Northern Transylvania, Bessarabia, Northern Bukovina = 48 departments	Foundation[b] less Bachka and southern Baranya	Neuilly plus Southern Dobruja	Prewar plus Upper Region and Subcarpathian Ruthenia (Hungary) less Bessarabia and Northern Bukovina (Rumania)

TERRITORIAL SCHEME OF THE DANUBIAN COUNTRIES (*Continued*)

1942 1943 1944	Trianon plus Upper Region, Subcarpathian Ruthenia, Northern Transylvania, Southern Region (Bachka and southern Baranya) (Enlarged IV)	Versailles less Southern Dobruja, Northern Transylvania = 59 departments = 48 departments plus Bessarabia and Northern Bukovina	Foundation less Bachka and southern Baranya	Neuilly plus Southern Dobruja	Prewar plus Upper Region and Subcarpathian Ruthenia (Hungary)
1945 1946 1947	Trianon	Versailles less Southern Dobruja, Bessarabia, Northern Bukovina = 58 departments = 48 departments plus Northern Transylvania	Foundation	Neuilly plus Southern Dobruja	Prewar less Bessarabia and Northern Bukovina (Rumania)
1948 1949	Paris = Trianon less Pozsony district	Versailles less Southern Dobruja, Bessarabia, Northern Bukovina = 58 departments = 48 departments plus Northern Transylvania	Paris = foundation plus Istria and Postojna district	Neuilly plus Southern Dobruja	Prewar plus Istria and Postojna district (Yugoslavia) less Bessarabia and Northern Bukovina (Rumania), Pozsony district (Hungary)

[a] See United Nations, Stat. Off., *Demographic Yearbook, 1948* (Lake Success, 1949), p. 105, n. 48; and Internat. Inst. Agr., *International Yearbook of Agricultural Statistics, 1941–42 to 1945–46* (Rome, 1947), III, 125.

[b] The so-called Southern Region (Délvidék in Hungarian) was included in the "statistical" territory of Hungary embracing Bachka and a small part of Baranya (south of the Danube) against the principle of space adherence adopted. In order to conform to the treatment of Délvidék in Hungarian war statistics, Bachka is excluded here also "prematurely" from the Yugoslav territory.

TERRITORIAL CHANGES IN THE LOWER DANUBE BASIN DURING THE DECADE 1938–47*

Country	Name of province	Time of Gain	Time of Loss	Area transferred (*1,000 hectares*)
Hungary	Upper Region or Felvidék	5–10 Nov. 1938	End of 1944	1,193
	Subcarpathian Ruthenia or Kárpátalja	March–April 1939	October 1944	1,206
	Northern Transylvania or Erdély	5–13 Sept. 1940	October 1944	4,310
	Southern Region or Délvidék (Yugoslav Bachka and Yugoslav part of Baranya)	10–16 April 1941	October 1944	1,148
	Pozsony district		10 Feb. 1947	6
Rumania	Southern Dobruja		7 Sept. 1940	773
	Northern Transylvania	October 1944	5–13 Sept. 1940	4,310
	Bessarabia and Northern Bukovina*	July 1941	First time: 2 Aug. 1940 Second time: March–August 1944	4,442 Bessarabia 552 Northern Bukovina
Yugoslavia	Bachka and Yugoslav part of Baranya (i.e., Baranya south of the Danube)	October 1944	10–16 April 1941	1,148
	Istria and Postojna district	10 Feb. 1947		934
Bulgaria	Southern Dobruja	7 Sept. 1940		773

*Sources as follows:

Hungary, p. 144, this volume.

Rumania: Southern Dobruja, see Bulgaria, below; Northern Transylvania, see Hungary, above; Bessarabia and Northern Bukovina from Rumania, Ministère de l'agriculture et des domaines, *L'agriculture en Roumanie: Atlas statistique* (1938), p. 2.

Yugoslavia, Statistique générale d'état, *Annuaire statistique, 1940* (1941), p. 2; United Nations, Stat. Off., *Demographic Yearbook, 1948* (Lake Success, 1949), p. 83; see also Hungary, above.

Bulgaria, Direction générale de la statistique, *Annuaire statistique du Royaume de Bulgarie, 1942* (1942), p. 3.

[a] In addition to Bessarabia and Northern Bukovina, Rumania lost to the USSR in 1945 the Herta region from Dorohoi district.

2. METHODOLOGICAL NOTE TO TABLE 17

Column 1.—The harvest figures, in calories, are obtained by multiplying the quantities harvested, given in quintals (data from Appendix Tables VII–

X), by the factors for conversion of weight units of food commodities into energy metabolizable for man (data from Appendix Table XI).

For Yugoslavia 1940 the total energy value (physiological calorie content) of the food crop harvest was found with the help of the following proportion:

$$\frac{\text{Sum of 1940 energy quantities of all crops}}{\text{Sum of 1934–38 energy quantities of all crops}} = \frac{\text{Sum of 1940 energy quantities of the crops for which data on quantities harvested for 1940 are available}}{\text{Sum of 1934–38 energy quantities of the crops for which data on quantities harvested for 1940 are available}}$$

or (in American trillion calories): $\frac{X}{30{,}220} = \frac{27{,}605}{29{,}462}$

and $X = 0.937 \cdot 30{,}220 = 28{,}316$.

The same method was applied for 1945 with the result $X = 0.53 \cdot 30{,}220 = 16{,}017$. Accordingly, total energy values of food crops harvested in 1940 and 1945 were 94 and 53 percent, respectively, of the average for 1934–38.

For 1943 the energy value of the food crop harvest was ascertained as 65 percent of that in 1934–38 (average) from data given by Rudolf Bićanić (*1*) for the harvest of cereals. The weighted arithmetic mean of Bićanić's figures for the percentage decrease from the 1935–37 average in the quantities harvested in 1943 by provinces has been computed, using figures of Bićanić for the percentage shares of the provinces in total (gross) "value of agricultural production" as weights. The general decrease for all cereal crops in all provinces proved to be 34 percent, or 35 percent if the basis of comparison is changed from 1935–37 to 1934–38.

Column 2.—The figures on the harvest of bulky fodder, expressed in calories, are the mathematical product of (*a*) number of grazing farm animals (in and outside agriculture) in metabolic livestock units, and (*b*) energy value of bulky fodder produced (grazed and mown) per metabolic livestock unit of grazing farm animals.

a) The conversion of livestock, given in natural units (heads) without distinction of age, into metabolic units was carried through in *three steps* (for initial data and results of the conversion see Appendix Table XIII). First, each group of animals by kind—horses, cattle, sheep, and pigs—was broken down into young and mature animals according to the percentage age-composition of the national herds in the prewar period (Hungary and Rumania 1939, Yugoslavia 1938, Bulgaria 1934). Then the natural units of young and mature animals of one and the same kind, e.g., horses, were converted into metabolic units of that kind of animal, e.g., metabolic horse-units, by multiplication with the "basal metabolism ratios" (or "basic energy-expenditure ratios") of the live-weight classes to which the young and the mature animals belonged (for data on live weight and basic metabolism ratios see Appendix Tables XIV and XV respectively). Finally the numbers of horses, sheep, and pigs, expressed in metabolic horse-, sheep-, and pig-units, were all converted into metabolic units for cattle by multiplication with the ratios between the basal metabolism requirements (between the basic energy expenditures) of each of these kinds of animals and cattle, namely

with 1.3 for horses, .2 for sheep, and .5 for pigs; these ratios follow from an accepted scale of basal metabolism requirements given by Leroy (*2*, p. 264). The number of cattle in metabolic cattle units, of course, remained unaffected by this operation. Thus the national herds were unified as to kind and age (weight) of animals, a cow of 250 kilograms being considered as the standard animal (250 kilograms was the average live weight of cows in Bulgaria during the years 1934–45; see *3*, p. 119; but this fact has no bearing on the principle of conversion). The basic metabolism ratios—computed for different live-weight classes or for different kinds of animals—are directly proportional to the daily basic energy expenditures (i.e., to the average requirements for maintenance in terms of net energy). The basic energy expenditures in their turn are functions—though not linear ones—of the body weight of the animals.

b) For the prewar period, the energy value of bulky fodder produced (grazed and mown) per metabolic unit of grazing farm animals could be ascertained only for Bulgaria: it amounts to 1,858 thousand calories per year (net for animals). The figure 1,858 thousand is obtained by dividing the energy value of the average bulky-fodder harvest in Bulgaria for the years 1934–38—7,448 American billions of large calories (net for animals)—by the number of grazing farm animals for 1936—4,009,000 metabolic livestock units.

The energy value of the Bulgarian bulky-fodder harvest was taken as 7.6 times the energy of all hay (980 American billion large calories, net for animals); the ratio 7.5 was established by Condoff for 1936–38, working with "fodder units," in his study on bulky-fodder production in Bulgaria (*3*, pp. 126–27).

The figure 1,858 thousand calories, i.e., the prewar energy value of bulky fodder produced annually per metabolic unit of grazing farm animals in Bulgaria, was applied also for Rumania and Yugoslavia, and was raised by 5 percent to get an estimate of the corresponding figure for Hungary (1,951 thousand). To accept the resulting country-to-country relation of the levels of bulky-fodder production (105 : 100 : 100 : 100 for Hungary, Rumania, Yugoslavia, and Bulgaria) seemed justified by the fact that only in Hungary were physical yields of bulky fodder per hectare and density of grazing farm animals combined more favorably than in Bulgaria; that is to say, only in Hungary did higher yields coincide with lower density. This is revealed by the following data, derived from Appendix Tables XIII, XVI, and XX–XXIII:

Country (state territory as defined in Appendix C, note 1)	Number of grazing farm animals per hectare of agricultural land in 1939 (*metabolic livestock units*)	Yields per hectare 1934–38 average, of		Ratio of physical yields to density of animals for	
		Alfalfa hay (*quintals*)	Permanent meadow hay (*quintals*)	Alfalfa hay	Permanent meadow hay
	(1)	(2)	(3)	(2) ÷ (1)	(3) ÷ (1)
Hungary	.513	22.5	42.2	43.9	82.2
Rumania	.503	19.2	32.9	38.2	65.2
Yugoslavia	.530	17.3	38.4	32.6	72.5
Bulgaria	.762	24.6	54.4	32.3	71.4

For the First and the Second War Trienniums the energy values of bulky fodder annually produced per metabolic unit of grazing farm animals by country were computed on the basis of the figures for the prewar period (1,951 thousand calories for Hungary, 1,858 thousand calories for Rumania, Yugoslavia, and Bulgaria) and with the help of a general index of physical yields of bulky fodder per hectare. The general yield index, constructed as simple arithmetic means of the yield indexes of four principal feed crops (namely: alfalfa hay, permanent meadow hay, vetch hay, and wheat, as substitute for straw) with the 1934–38 average as the base (100), is given below:

Year	Trianon Hungary	Rumania	Yugoslavia	Bulgaria
1940–42.....	108.6	80.4	82.0	94.0
1943–45.....	83.8	81.4	72.8	74.0

For sources of data see Appendix Table XVI.

The relative changes in the energy value of bulky fodder annually produced per unit of grazing farm animals cannot be expected to be equal to the relative changes in the level of physical yields of bulky fodder per hectare. When yields fall from a more or less "normal" level, grazing is extended in time and area and thus tends to offset, fully or partially, the decrease of yields. Therefore, a rough adjustment in the bulky-fodder yield index was made to take into account the effect of such an extension which must have occurred in the Danubian countries during the war period. Drops in yields up to 10 percent were disregarded and drops ranging from 10 to 30 percent were considered only by 50 percent. The energy values of bulky fodder annually produced per unit of grazing farm animals were then fixed in proportion with the adjusted index of bulky-fodder yields.

The factors for conversion of feeding stuff into energy net for animals, applied in order to get the energy value of all hay produced in Bulgaria annually during the prewar period, are established mostly in experiments with cattle and sheep only. Fortunately in the case of hay the calorie content of the feeding stuffs (permanent meadow grass, alfalfa, clover, and vetch) in terms of net energy is almost the same when fed to the different kinds of livestock, except pigs (*4*, pp. 54–55). Pigs are known to utilize alfalfa better than cattle and sheep, yet their number in natural units (heads) is too small to warrant a correction, either of the energy value of the hay harvest or of the number of livestock in metabolic livestock units. Even for Hungary such a correction would amount to no more than 1 or 2 percent.

Column 3.—As waste of food crops at the stage of crop production, 1 percent from the total quantity harvested has been allowed. This is assumed to be approximately the loss between threshing and withdrawal from the barn. Threshing yield is taken as a basis, because the physical yields per hectare are enumerated statistically from the quantity threshed (not from the quantity harvested, strictly speaking). Waste of bulky fodder is not taken into account, but this means that only losses in transportation from the fields to the barn are ignored, since losses in field-curing of hay are reflected in the yield data.

Column 4.—Since the balance relates to calendar years, "seed used in the balance year" is made up theoretically of seed used for spring sowings on areas harvested in the given calendar year and seed used for fall sowings on areas harvested in the following calendar year. Both elements are statistically products of areas sown and seeding rates (kilograms per hectare). However, the energy value of seed used for spring sowings only is very small as compared with the energy value of total seed used (about 10 percent), because either the quantity of seed per hectare is small (maize, sugar beets, and potatoes), or the area sown is small (spring wheat). Thus in practice it appeared reasonable to try to determine for all food crops the area sown in a given calendar year (on the same state territory, it is understood). Working with averages for 3 or 5 years reduces the error of computation from that source to an insignificant item.

In accordance with the once adopted space-adherence principle (the principle of "following-year-registration"; see page 101), in calendar years of territorial changes the "losing countries" were charged with both the spring and winter sowings in the territories transferred (since they also were credited with the whole agricultural harvest of these territories in the year of transfer). The Hungarian "Southern Region" in 1941 is treated differently, which affects the food balances of Yugoslavia and Hungary (see Territorial Scheme).

In some cases, namely Hungary in the Second War Triennium, and Yugoslavia in the First and Second War Trienniums, there were no data available as to areas sown or harvested *by crop*. The way out of this difficulty was to relate the total energy value of seed used to the total area of food crops or all crops in a base year and to multiply the respective total area for the given year by the average energy value of seed per hectare for the base year.

It was possible to obtain information on *seeding rates* for cereals and potatoes by country. However, only in the case of Bulgaria do the rates unquestionably represent the ratio of total quantity of seed used to the total area sown (by crop). For the other Danubian countries it is not certain whether the rates are statistical-observation results or technological norms ("usual seeding rates"). For the remaining crops official allowances applied in Germany were taken as a substitute for statistical data on seeding rates.

All our data on seeding rates refer to time period preceding World War II. Therefore they could be used only on the assumption that in the short run seeding rates do not change significantly, which is not true for years of bad harvest like 1945 and 1946.

Column 5.—The whole quantity of vegetal farm products used as fodder in crop production, i.e., fodder of draft animals on farms for basal metabolism and work in agriculture, has been charged to the bulky fodder produced to get a clearer accounting picture. This quantity is called here Feed I. For Hungary and Bulgaria the figures on Feed I include the fodder used by draft animals which are not kept on farms; to that extent the production discount is overestimated and the carryover of crop production (item *d*) is underestimated.

The total amount of energy required annually for basal metabolism of draft animals on farms has been computed by multiplying the number of horses, mules, cattle, and buffaloes, expressed in metabolic units (for selected

single years or as two- or three-year averages; see Time Table, page 136), by 1,460,000 calories which is 365 times 4,000 calories, the standard value of basic expenditure of net energy for 24 hours per metabolic livestock unit. The norm for the basic energy expenditure of a cow of 250 kilograms has been accepted in accordance rather with the feeding standards established by Morrison (*5*, p. 1004) than with those given by Leroy (*2*, p. 264) and reproduced in Appendix Table XV, page 126.[1] Leroy's figures have been used in this study only to find the *relations* between the basal metabolism requirements for different kinds of farm animals, not their actual level.

Column 6.—The way in which the energy spent annually for animal work in agriculture in addition to the energy required for maintenance (i.e., basal metabolism requirements for energy net for animals) has been computed can be seen in detail from Appendix Table XIX, page 130. Here the assumptions on which the computations rest must be explained briefly.

The starting point is the number of days which our abstract animal—the metabolic livestock unit—must work per hectare of cropland during the year. Condoff (*3*, p. 123) assigns 30 days to an average cow in Bulgaria and this is what we need, since the average Bulgarian cow is our metabolic livestock unit.

If soil and weather conditions are the same from country to country, greater amounts of work correspond to higher yields per hectare. Ignoring the difference in soils (in order to avoid arbitrary adjustments) and thinking in terms of "average weather" for a five-year period, the norm of 30 workdays per metabolic livestock unit per year was accepted as a minimum for Rumania (the country with the lowest yields), while the norms for the other Danubian countries were set roughly in proportion to the unweighted interspatial index of yields per hectare (of wheat, rye, barley, oats, maize, potatoes, and sugar beets) in 1931–35, published by Moore (*7*, p. 193), as follows:

	Europe	Hungary	Rumania	Yugoslavia	Bulgaria
Yield index	100	85.2	63.0	69.7	74.3
Workdays of metabolic livestock unit per hectare per year	—	36	30	31	32

Furthermore on the assumption that the agricultural technique did not change during the war, the same annual workday norms were applied for all periods.

The total amount of additional fodder necessary for work represents the product of the total number of days worked by all draft animals during the year and the energy requirements, above maintenance, of the metabolic livestock unit for work per day (Appendix Table XIX). The total number of days worked has been found by multiplying cropland in hectares by workdays per hectare (Appendix Table XIX, col. 3). The energy requirements, above maintenance, of metabolic livestock unit per workday for work has been determined as the calorie content of 1.5 "fodder units," or $1.5 \times 1{,}600 = 2{,}400$ large calories of net energy, the calorie content of fodder unit being derived from the ration for maintenance (see Condoff, *3*, p. 123).

[1] H. P. Armsby (*6*, p. 25) also uses lower norms for basic energy expenditure than Leroy.

CITATIONS

1 Rudolf Bićanić, "The Effect of the War on Rural Yugoslavia," *Geographic Journal* (London), January-June 1944, pp. 33 (map), 34.

2 André M. Leroy, "The Utilization of Feed Energy by Animals," *Food and Agriculture: The FAO European Bulletin* (Rome), February-March 1948.

3 Nikola Condoff, "The Forage Problem in Bulgaria," *Narodno Stopanstvo* (Bulgaria, Haute chambre d'économie nationale), 1947, No. 9–10.

4 R. D. Jennings, *Consumption of Feed by Livestock 1909–47: Relation Between Feed, Livestock and Food at the National Level* (U.S. Dept. Agr., Bur. Agr. Econ., Circ. 836, December 1949).

5 F. B. Morrison, *Feeds and Feeding* (Ithaca, 1936).

6 H. P. Armsby, *The Conservation of Food Energy* (Philadelphia and London, 1918).

7 W. E. Moore, *Economic Demography of Eastern and Southern Europe* (League of Nations, Geneva, 1945).

APPENDIX TABLES

TABLE I.—RURAL-PROPERTY LAND IN RUMANIA BEFORE THE AGRARIAN REFORM OF 1918: PERCENTAGE DISTRIBUTION BY SIZE OF PROPERTIES*

Classes (*Hectares*)	Old Kingdom 1896–1902–05	Transylvania 1916	Bukovina around 1918	Bessarabia around 1918	Total
Under 10	40.3	34.1	26.0	51.6	39.6
10 to 100	11.0	28.9	12.8	4.3	16.3
100 and above	48.7	37.0	61.2	44.1	44.1
Total	100.0	100.0	100.0	100.0	100.0

* Based on data in *1*, p. 215; *2*, pp. 202, 204, 210; *3*, p. 324.

Observation units. Old Kingdom: all properties on agricultural land, excluding vineyards and prune orchards; Transylvania: private and ecclesiastic properties on agricultural land and forests; Bukovina: all properties on all kinds of land; Bessarabia: all properties on agricultural land and forests.

TABLE II.—LAND IN PROPERTIES IN HUNGARY BEFORE AND AFTER THE AGRARIAN REFORM OF 1945*

Classes of properties in cadastral holds	Absolute figures (*thousand cadastral holds*)		Percent	
	Census 1935	After the reform of 1945	Census 1935	After the reform of 1945
Under 5 (under 2.9 hectares) ..	1,631	2,872	10.1	17.9
5–10 (2.9 to 5.7 hectares)	1,477	3,389	9.2	21.1
10–100 (5.7 to 57 hectares) ...	5,235	6,443	32.6	40.1
100–200 (57 to 115 hectares) ..	805	714	5.0	4.4
200–1,000 (115 to 575 hectares)	2,124	1,353	13.2	8.4
1,000 and over (575 hectares and over)	4,809	1,310	29.9	8.1
Total	16,081	16,081	100.0	100.0

* Census 1935 data from Table 3, p. 160. Postreform figures, data of the National Landed Estate Regulation Council in *4*.

TABLE III.—FARMLAND IN YUGOSLAVIA IN 1931: PERCENTAGE DISTRIBUTION BY SIZE OF FARMS AND BANOVINE*

Classes of farms (*Hectares*)	Banovina									Yugoslavia
	Drinska	Moravska	Dunavska	Savska	Primorska	Dravska	Vrbaska	Vardarska	Zetska	
Under 2	5.8	5.7	5.0	9.1	17.2	3.4	5.4	7.8	6.0	6.5
2 to 5	20.5	26.4	16.4	30.2	26.6	9.8	22.9	26.5	18.4	21.5
5 to 10	27.9	34.2	23.5	30.0	19.3	16.2	33.8	31.5	26.0	27.0
10 to 50	41.2	30.5	42.7	19.5	20.5	50.9	35.1	28.4	41.8	35.4
50 to 100	2.7	1.2	5.0	1.2	3.2	6.5	1.5	1.4	5.1	3.2
100 and over ...	1.9	2.0	7.4	10.0	13.2	13.2	1.3	4.4	2.7	6.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Data from *5*, pp. 86–87.

TABLE IV.—PRIVATE FARMS, PRIVATE RURAL PROPERTIES, FARMLAND, AND LAND IN PRIVATE RURAL PROPERTIES IN BULGARIA BEFORE WORLD WAR I, IN THE INTERWAR PERIOD, AND AFTER WORLD WAR II: PERCENTAGE DISTRIBUTION BY SIZE OF UNITS*

Exploitation or property units (*Hectares*)	Exploitation or property units			Land		
	Properties (*Sampling survey, 1933/34*)	Farms (*Census 1934*)	Farms (*Census 1946*)	Properties (*Sampling survey, 1933/34*)	Farms (*Census 1934*)	Farms (*Census 1946*)
Under 2 ...	23.4	27.0	28.9	4.8	5.3	6.4
2 to 5	39.1	36.1	38.2	24.6	24.7	29.0
5 to 10	24.8	26.2	25.2	31.9	36.9	38.6
10 to 30	12.0	10.3	7.5	32.8	29.5	23.0
30 to 50	0.7	0.3	0.2	5.9	2.0	1.5
50 and over .		0.1	0.0		1.6	1.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

* Data from *6*, p. 90; *7*, p. 183; *8*, p. 27. The term "private rural properties" refers to local private properties only, and excludes plots of proprietors living outside the respective municipality.

TABLE V.—SCOPE AND IMMEDIATE RESULTS OF THE AGRARIAN REFORMS IN THE DANUBIAN COUNTRIES, 1918–1950*

Date of law[a]	Upper limit: Of private landownership[b] (Ha. per family)	Upper limit: Of allotment[c] (Ha. per family)	Land taken over: Area (1,000 ha.)	Land taken over: Main sources	Land taken over: Ratio to state territory (Percent)	Land distributed to farmers: Beneficiaries[d] (1,000)	Land distributed to farmers: Area (1,000 ha.)	Land distributed to farmers: Ratio to number of beneficiaries (Ha. per beneficiary)	Land distributed to farmers: Ratio to agricultural land (Percent)	Years of balance statement
				HUNGARY[e]						
Act XXXVI 1920 and Act XLV 1921	—	1.71[f]	552	Expropriation over 1,000 c.h. per estate without compensation[g]	6	404[h]	415	1.03	5	End 1928
Law 1942	—	...	415?	Expropriation of Jewish estates	2	...	...	...	...	End 1943
Decree Law March 15, 1945	Exploitation (*a*) direct: 114[i] (*b*) indirect: 57	8[j]	3,337	Expropriation over 100 c.h. per estate against (promise of) indemnity	36	642[k]	1,875	2.92	25	End 1946
				RUMANIA[e]						
Decree Law December 16, 1918 and Law July 17, 1921	100–500 according to agro-geographic conditions, local demand for land, and real capital equipment of farms	5–8 according to province	6,008	Expropriation of individual property above legal maximum, crown domains, and mortmain: all against indemnity	20	1,369	3,630	2.65	21	September 1, 1927

* Data for Hungary from *9*, pp. 46 ff.; *10*, pp. 67 ff.; *11*, pp. 58 ff.; *12*, p. 10; *4* (see also p. 159, this volume); *13*, pp. 16 ff.
Rumania: *2*, pp. 129 ff., 136 ff., 220 ff.; *14*, p. 339; *15* (see p. 235, this volume); *16*, pp. 37, 42.
Yugoslavia: *17*, pp. 243 ff.; p. 294, this volume; *18*; *19*; *20*, pp. 99 ff.; *21*, pp. 159 ff. Bulgaria: *22*, pp. 89 ff., 122 ff.; *23*; *24*, p. 113; *25*, p. 136.

TABLE V.—SCOPE AND IMMEDIATE RESULTS OF THE AGRARIAN REFORMS IN THE DANUBIAN COUNTRIES, 1918–1950 (*Concluded*)

Date of law[a]	Upper limit		Land taken over			Land distributed to farmers				
	Of private landownership[b]	Of allotment[c]	Area	Main sources	Ratio to state territory	Beneficiaries[d]	Area	Ratio to number of beneficiaries	Ratio to agricultural land	Years of balance statement
	Ha. per family		1,000 ha.		Percent	1,000	1,000 ha.	Ha. per beneficiary	Percent	
Law March 22, 1945	50	5	1,400[l]	Expropriation over 50 ha. per estate against (promised) indemnity and confiscation of the German minority lands	6	900[m]	1,040	1.16[m]	8	1948? (at latest)
				YUGOSLAVIA						
Decree Law February 25, 1919 and laws June 9, 1931, December 5, 1931, June 24, 1933	100–500 for all kinds of land, 50–300 for agricultural land only	50	...	Expropriation of private and ecclesiastic property against indemnity, purchases by the state and expropriation of public lands[n]	...	536	1,623	3.01	12	End 1934

Law August 23, 1945, amended March 19, 1946	Exploitation (*a*) direct: to be determined by special law according to region, (*b*) indirect: for farmers agricultural land 45, crop land 25–35, for non-farmers, private 5, ecclesiastic 10–30	5–7[e]	883 1,566	Expropriation of private property against (promised) indemnity and confiscation of the German minority land	3	312	461 797	1.48	3	January 1947? (at latest) End 1950? (at latest)
				BULGARIA						
Law May 9, 1921 and Law December 20, 1922	Exploitation (*a*) direct: 30, (*b*) indirect: 4	...	...	Expropriation of private property against indemnity and public lands[n]	...	177	333	1.88	6	End 1945
Law July 21, 1924 and Law May 23, 1941	(*a*) direct: 30 + 5 for each member over 5 members, (*b*) indirect: 15									
Law April 9, 1946[p]	(*a*) direct: 20 + 2 for each unmarried child over 2 unmarried children,[q] (*b*) indirect: 3 + 2[r]	...	250	Expropriation of private property	...	130	...	...	...	End 1954

[a] Norms as established by the amendments. [b] Decreed. [c] Observed. [d] Farmers. [e] There have been issued two other, less important laws, concerning land property and resettlement of peasants: one in Hungary (1940) and one in Rumania (1908). [f] Three cadastral holds. [g] Capital levy. [h] Including 291 landless. [i] Exceptions for political adherence. [j] Up to 12 children. [k] Including 396 landless. [l] Approximative estimate. [m] Approximative. [n] Municipal and state. [o] Vojvodina. [p] Data on number of beneficiaries and land taken from article by Stanko Todoroff, Minister of Agriculture, in *Rabotnichesko Delo* [*Workers' Deed*] (Sofia), Sept. 1, 1954. The author admits that expropriated land was given to collective farms and used to form 100 state farms. [q] Southern Dobruja 30 + 2. [r] Southern Dobruja 5 + 2.

TABLE VI-A.—FARMS IN THE LOWER DANUBE BASIN, 1895–1949: DISTRIBUTION BY SIZE*

Class of farms[a] (*Hectares*)	BEFORE WORLD WAR I						
	Hungary	Rumania	Dalmatia and Carniola	Bosnia and Herzegovina	Serbia	Bulgaria	Lower Danube Basin
	1895	1913	1902	1906	1897		
DS under 5	2,029,427	917,985	111,403	185,913	144,168	231,156	3,620,052
MS 5–50	741,684	210,243	46,168	91,434[b]	128,216	225,816[b]	1,443,561
LP 50–100	10,825	1,554	875	—	710	—	13,964
LGG 100 and over	13,949	3,420	486	—	74	—	17,929
Total	2,795,885	1,133,202	158,932	277,347	273,168	456,972	5,095,506

	INTERWAR PERIOD				
	Hungary	Rumania	Yugoslavia	Bulgaria	Lower Danube Basin
	1930		1931	1934	
DS under 5	1,342,635	2,460,000	1,348,149	559,105	5,709,889
MS 5–50	240,761	795,000	630,619	325,203	1,991,583
LP 50–100	6,274	12,800	5,156	561[b]	24,791
LGG 100 and over	7,976	12,200	1,801	—	21,977
Total	1,597,646	3,280,000	1,985,725	884,869	7,748,240

	AFTER WORLD WAR II				
	Hungary after reform of 1945	Rumania[c] 1948	Yugoslavia 1949	Bulgaria 1946	Lower Danube Basin
DS under 5	1,794,504	2,343,229	1,489,744	733,957	6,361,434
MS 5–50	261,456	738,828	712,485[b]	360,256	2,073,025
LP 50–100	5,525	14,120[b]	—	691[b]	20,336
LGG 100 and over	4,629	—	—	—	4,629
Total	2,066,114	3,096,177	2,202,229	1,094,904	8,459,424

* *Sources:* Before World War I: *26*, p. 69; *27*, pp. 50 ff.; *20*, p. 282; *28*, p. 44; *29*, p. 18; *6*, p. 90. Interwar Period: see Table 11, p. 48. After World War II: *4*; *30*, p. 86; *31*, p. 30; *8*, p. 27.

Properties are substituted for farms in the case of Serbia 1897 (private rural properties), Bulgaria 1897 (local private rural properties), and Hungary "after the land reform of 1945" (landed properties of all kinds), the identity of exploitation and property units being in these cases very close. "Farms" for Hungary in 1930 include parts of farms by parishes; for Bulgaria in 1934 and 1946 the figures relate to private farms only.

For the time before World War I "Hungary" denotes the Kingdom of Hungary which included Croatia-Slavonia, Baranya, Bachka, Banat, and Transylvania, and "Rumania" denotes the Old Kingdom of Rumania, composed of Wallachia (Muntenia) and Moldavia (including Northern Dobruja). The total covers the area of the Lower Danube Basin excluding Macedonia, Montenegro, Bessarabia, Bukovina, and two small regions of district size belonging to former Turkey in Europe (namely Kosovo and Metohia), which means the omission of about 800,000 farms maximum. The figures for the Interwar Period and the time after World War II relate to the actual territories of the Danubian countries (except for the series "after the land reform of 1945" for Hungary which seems to be an accounting statement made before 1948 and referring to Trianon Hungary).

[a] DS = Dwarf and small farms, MS = Medium-sized farms, LP = Large peasant farms, LGG = Large gentry and giant farms.

[b] Assumed to be limiting groups which may be accepted in view of the very small number of farms in the higher bracket groups.

[c] The class interval is "more than . . . to . . . inclusive," i.e., not "from . . . inclusive to . . ." as generally adopted.

TABLE VI-B.—FARMS IN THE LOWER DANUBE BASIN, 1895–1949: PERCENTAGE DISTRIBUTION BY SIZE*

Class of farms[a] (*Hectares*)	BEFORE WORLD WAR I						
	Hungary	Rumania	Dalmatia and Carniola	Bosnia and Herzegovina	Serbia	Bulgaria	Lower Danube Basin
	1895	1913	1902	1906	1897		
DS under 5	72.6	81.0	70.1	67.1	52.8	50.6	71.0
MS 5–50	26.5	18.6	29.0	32.9[b]	46.9	49.4[b]	28.3
LP 50–100	0.4	0.1	0.6	—	0.3	—	0.3
LGG 100 and over ..	0.5	0.3	0.3	—	0.0	—	0.4

	INTERWAR PERIOD				
	Hungary	Rumania	Yugoslavia	Bulgaria	Lower Danube Basin
	1930		1931	1934	
DS under 5	84.0	75.0	67.8	63.1	73.7
MS 5–50	15.1	24.2	31.8	36.8	25.7
LP 50–100	0.4	0.4	0.3	0.1[b]	0.3
LGG 100 and over ..	0.5	0.4	0.1	—	0.3

	AFTER WORLD WAR II				
	Hungary after reform of 1945	Rumania[c]	Yugoslavia	Bulgaria	Lower Danube Basin
		1948	1949	1946	
DS under 5	86.9	75.6	67.6	67.1	75.3
MS 5–50	12.6	23.9	32.4[b]	32.9	24.5
LP 50–100	0.3	0.5[b]	—	0.0[b]	0.2
LGG 100 and over ..	0.2	—	—	—	0.0

* Data computed from Table VI-A; notes as in that table.

TABLE VII.—HUNGARY: HARVEST OF PRINCIPAL FOOD CROPS AND ALL HAY, AVERAGES 1934–38, 1940–42, AND 1943–45*

(Thousand quintals)

Crop	1934–38	1940–42		1943–45	
	Trianon territory	Trianon territory	Enlarged territory	Trianon territory	Enlarged territory
Food crops proper and feed cereals					
Wheat	22,196	18,025	25,785[a]	17,517	25,058[a]
Rye	6,976	5,566	6,734	5,396	6,529
Rice (rough)	180	(180)[b]	(180)[b]	(180)[b]	(180)[b]
Maize	23,061	18,763	26,231	18,047	25,230
Barley	6,079	5,550	7,557	6,088	8,292
Oats	2,696	3,126	4,788	2,801	4,291
Millet	80	248	337	93	126
Sugar beets	9,595	9,374	14,466	6,797	10,488
Sunflower seed	266	235	480	806	1,647
Rapeseed	85	63	72	50	57
Soybeans	...	78	105	166	223
Dry beans (alone and associated)	537	545	804	580	735[c]
Lentils	80	31	42	20	27
Peas	310	604	727	721	868
Potatoes	21,325	20,983	29,038	20,493	28,362
All hay					
Permanent meadows	15,102[d]	16,723[e]	33,101	10,806	21,385
Alfalfa	...	8,607	10,767[e]	6,322	7,909
Clover	4,436[d]	5,401	8,531[e]	4,902	7,745
Vetch	4,854[f]	4,876	6,165[e]	4,134	5,225

* Data for 1934–38 in general from *32*, Vol. I; hay, *33*; vetch, *34*, p. 81. Trianon and Enlarged Hungary 1940–42, and Trianon Hungary 1943 and 1945 from *34*, pp. 80–81. Trianon Hungary 1944 from *32*, Vols. I, III. No data are available on agricultural production in the territory of Enlarged Hungary for 1944 and 1945. The 1943–45 averages for Enlarged Hungary are obtained by multiplying—for each crop separately—the 1943–45 average for Trianon Hungary by the ratio of the 1940–42 average for Enlarged Hungary to the 1940–42 average for Trianon Hungary. In other words, it is assumed that the quantities harvested in Enlarged Hungary changed in the same proportion as those in Trianon Hungary. Since the average composition of the territory of Enlarged Hungary for the Second War Triennium (as defined in the territorial scheme; see p. 102) differs very little from that for the First War Triennium, the error in computation from that source is not significant.

[a] Corrected data. In the computations in chapter 4 lower figures were used: 24,520 for 1940–42, and 23,823 for 1943–45.

[b] Average 1934–38 accepted as rough estimate.

[c] Ratio of harvest in Enlarged Hungary to harvest in Trianon Hungary for beans as an associated crop assumed equal to that for beans grown alone.

[d] Average 1933–37.

[e] Average of 1941 and 1942.

[f] 1939.

TABLE VIII.—RUMANIA: HARVEST OF PRINCIPAL FOOD CROPS AND ALL HAY, AVERAGES 1934–38, 1940–42, AND 1943–45*

(*Thousand quintals*)

Crop	1934–38 Departments 71, 71, 71	1940–42 Departments 71, 48, 59	1943–45 Departments 59, 59, 58
Food crops proper and feed cereals			
Wheat	33,586	19,162	28,450
Rye	3,912	1,347	2,055
Rice (rough)	10	19	74
Maize	51,413	38,582	33,682
Barley	10,313	6,468	6,640
Oats	5,960	4,170	4,111
Millet	383	341	200
Sorghum (grain)	214	53	48
Sugar beets	5,861	6,077	6,799
Sunflower seed	1,789	1,999	1,934
Rapeseed	420	177	112
Soybeans	420[a]	511	459
Dry beans (alone and associated)	2,364	2,216	1,943[b]
Lentils	115	62	34
Peas	396	1,296	1,816
Potatoes (alone and associated)	20,233	13,497	17,886[b]
All hay			
Permanent meadows	29,776	21,903	19,052[c]
Alfalfa	4,446	12,699[d]	10,064[d]
Clover	5,355		
Fodder millet	3,272		

* Data for 1934–38 in general from *32*, Vol. I; hay, *35*, p. 74 and *36*, p. 418. 1940–45 from *32*, Vol. III; dry beans and potatoes, *32*, Vol. I. Adjustments for territorial changes: Areas, *32*, Vol. I, p. 234, *32*, Vol. III, pp. 124–27, and *35*, pp. 52–65, 86–87, 92–93; yields, *32*, Vols. I, III. The adjustments for territorial changes are made by multiplying—for each crop separately—the prewar area (1939 or 1937 for Bessarabia, Northern Bukovina, and Southern Dobruja; 1937 for Transylvania) by the yield per hectare for the respective year.

[a] Average 1935–39.

[b] For 1944 the figure of 1943 accepted.

[c] For 1944 the figure of 1943 plus 10 percent (allowance for actual increase of yield per hectare) taken.

[d] For 1941 and 1943 including other rotation meadows.

TABLE IX.—YUGOSLAVIA: HARVEST OF PRINCIPAL FOOD CROPS AND ALL HAY, AVERAGE 1934–38, YEARLY FIGURES 1940 AND 1945*

(Thousand quintals)

Crop	1934–38	1940	1945
Food crops proper and feed cereals			
Wheat	24,299	19,070	8,900
Rye	2,062	2,130	930
Spelt	123	...	...
Meslin	542	...	...
Rice (rough)	45	71	23
Maize	46,910	45,801	25,250
Barley	4,025	3,772	2,200
Oats	3,133	2,930	3,350
Millet	265	...	...
Sugar beets	5,086	7,830	4,100
Sunflower seed	119	...	771
Rapeseed[a]	107	29	...
Soybeans	15	80	700
Dry beans[b]	1,351	...	...
Lentils[b]	22	...	...
Peas[b]	64	...	...
Potatoes[b]	16,308	20,300	9,500
All hay			
Permanent meadows	31,798	...	...
Alfalfa	3,670	...	...
Clover	4,064	...	...
Vetch	144	...	...

* Data for 1934–38 from *37*, pp. 156–66; 1940 from *38*; 1945 from *38* and *39*, p. 44; see also pp. 303 ff., this volume.

[a] *Brassica rapa* (French: navette) as contrasted with *Brassica napus* (French: colza) in the other three countries.

[b] Grown alone and as associated crop.

TABLE X.—BULGARIA: HARVEST OF PRINCIPAL FOOD CROPS AND ALL HAY, AVERAGES 1934–38, 1940–42, AND 1943–45*

(*Thousand quintals*)

Crop	1934–38[a]	1940–42	1943–45
Food crops proper and feed cereals			
Wheat	16,588	11,047	13,570
Rye	1,995	1,269	1,290
Meslin	1,394	489	446
Rice (paddy)	162	345	191
Maize	7,632	7,697	5,056
Barley	2,986	1,982	1,717
Oats	1,115	1,233	974
Spelt	49	67	81
Millet (proso)	270	99	37
Sugar beets	1,100	2,777	2,678
Sunflower seed	1,308	1,256	655
Rapeseed	84	10	13
Soybeans	120	409	61
Dry beans (alone)	504	1,743	1,649
Lentils	30	36	61
Peas	20	25	48
Potatoes	1,006	1,605	1,485
All hay			
Permanent meadows	7,263	7,100	4,196
Alfalfa, clover, sainfoin	1,877[b]	2,210	1,711
Vetch	1,515[c]	1,863	1,631
Fodder millet	706	966	564
Green fallow	363[d]	355[d]	210[d]

* Data for 1934–38 generally from *40*, pp. 260–63 and *41*; for spelt and rapeseed, *42*, pp. 278, 344; for fodder, *7*, p. 280, *40*, p. 263, *43*, pp. 41–42, *42*, pp. 43–44. 1940–42 and 1943–45 from Appendix Table XVI for Bulgaria, pp. 458–59, this volume.

[a] The figures for wheat, rye, meslin, maize, barley, oats, spelt, sunflower seed, rapeseed, dry beans, and potatoes are averages for four years only; data for 1935 (crop year 1934/35) have not been published by the Central Statistical Office.

[b] For 1934 and 1935 only alfalfa; for 1936, 1937, and 1938, including Sudan grass.

[c] Average for 1934 and 1936.

[d] Estimate: 5 percent of the production of hay from permanent meadows (based on official data for 1939 and 1940).

TABLE XI.—FACTORS FOR CONVERSION OF VEGETABLE AND ANIMAL FOODS, GIVEN IN WEIGHT UNITS, INTO ENERGY METABOLIZABLE FOR MAN*
(CALORIE CONVERSION COEFFICIENTS, UTILIZATION COEFFICIENTS OF FOODS)
(*Large calories per 100 grams*)

Vegetable foods	Energy content	Animal foods	Energy content
Wheat (medium)	334	Milk (3.5 percent fat)	65
Wheat flour (ER 85 percent)	350		
Rye	319	Eggs	144
Rice (rough)	331		
Spelt	334	Egg products	144[d]
Meslin	327[a]		
Maize	356	Butter	716
Barley	332		
Oats	385	Cheese (hard)	387
Millet (proso)	338		
Sorghum	343	Lard	847
Sugar beets	50[b]		
Sunflower seed	284		
Sunflower oil	884		
Rapeseed	284[c]		
Rapeseed oil	884		
Soybeans	335		
Soybean oil	884		
Dry beans	288		
Lentils	296		
Peas	316		
Potatoes	70		

* Data for rice, dry beans, lentils, and peas from *44*. Others from *45*, Table 1.

[a] Simple arithmetic mean of wheat and rye.

[b] Estimate on the basis of the energy content of sugar (390), assuming extraction rate 13 percent.

[c] The figure for sunflower seed accepted.

[d] The figure for eggs accepted.

TABLE XII.—FACTORS FOR CONVERSION OF FEEDING STUFFS, GIVEN IN WEIGHT UNITS, INTO ENERGY NET FOR ANIMALS*
(CALORIE CONVERSION COEFFICIENTS, UTILIZATION COEFFICIENTS OF FEEDING STUFFS)
(*Large calories per 100 grams*)

Feeding stuff	Energy content
Bulky fodder	
Dry roughages	
Permanent meadows hay (grass hay)	80
Alfalfa hay	92
Clover hay	96
Vetch hay	93
Fodder millet hay	80
Wheat straw	24
Maize stovers	65
Green roughages and roots	
Grass	35
Green maize	32
Mangels	16
Concentrates	
Linseed meal	183
Vetch seed	183[a]
Corn, dent, well dried	181
Barley, common, for dairy cows	175
Oats, for dairy cows	157
Rye, grain	159
Wheat, grain	187

* The figures for dry roughages, linseed meal, and vetch seed are for dry matter (otherwise they would be 5–10 percent lower). The figures for green roughages are not for dry matter. As to the other figures it is not clear to what state of the feeding stuffs they do relate. The factors for conversion of dry roughages and linseed meal are established in experiments with cattle only (fattening); the factors for the other feeding stuffs are primarily for cattle and sheep.

Data for dry roughages and linseed meal from *46*, p. 145. Others from *47*, Appendix Table II.

[a] The figure for linseed meal accepted.

TABLE XIII.—LIVESTOCK: NUMBER IN NATURAL UNITS AND EQUIVALENTS IN METABOLIC LIVESTOCK UNITS, BY COUNTRY AND KIND OF ANIMALS FOR SELECTED YEARS OF THE PERIODS CONSIDERED*

Year and country (State territory as defined in Appendix C, note 1)	Horses and mules	Cattle and buffaloes	Sheep	Pigs	Total	Horses and mules	Cattle and buffaloes	Sheep	Pigs	Total	Grazing animals[a]	Draft animals[a]
	(*Thousand natural units, heads*)					(*Thousand metabolic livestock units, cows of 250 kg.*)						
Prewar Period												
1936												
Hungary	795	1,742	1,350	2,554	6,441	1,026	1,221	263	793	3,303	2,510	2,247
Rumania	2,026	4,313	11,809	3,030	21,178	2,348	4,492	2,241	968	10,049	9,081	6,840
Yugoslavia	1,234	4,111	9,568	3,126	18,039	1,413	4,159	1,758	1,148	8,478	7,330	5,572
Bulgaria[b]	555	1,819	9,126	827	12,327	567	1,708	1,734	293	4,302	4,009	2,275
Lower Danube Basin	4,610	11,985	31,853	9,537	57,985	5,354	11,580	5,996	3,202	26,132	22,930	16,934
1939												
Hungary	941	2,380	1,868	3,886	9,075	1,124	2,952	364	1,206	5,646	4,440	4,076
Rumania	2,044	4,443	12,851	2,926	22,264	2,369	4,627	2,439	936	10,371	9,435	6,996
Yugoslavia	1,293	4,263	10,154	3,503	19,213	1,481	4,312	1,866	1,286	8,945	7,659	5,793
Bulgaria	541	1,765	9,413	751	12,470	552	1,658	1,789	266	4,265	3,999	2,210
Lower Danube Basin	4,819	12,851	34,286	11,066	63,022	5,526	13,549	6,458	3,694	29,227	25,533	19,075
First War Triennium												
Hungary, 1941	1,121	3,486	2,952	4,694	12,253	1,339	4,324	575	1,436	7,674	6,238	5,663
Rumania, av. 1939, 1941, 1942[c]	1,616	3,706	10,450	2,394	18,166	1,864	3,860	1,983	765	8,472	7,707	5,724
Yugoslavia, av. 1939, 1945[d]	1,895	3,088	7,477	2,500	14,960	1,024	3,124	1,374	918	6,440	5,522	4,148
Bulgaria, 1941	625	1,974	10,128	1,095	13,822	638	1,854	1,925	388	4,805	4,417	2,492
Estimate for Lower Danube Basin, 1940–42 average	5,257	12,254	31,007	10,683	59,201	4,865	13,162	5,857	3,507	27,391	23,884	18,027
Second War Triennium												
Hungary, 1943–45 av.	866	2,879	1,948	3,870	9,563	1,045	3,583	380	1,201	6,209	5,008	4,628
Rumania, av. 1943, 1945[c]	1,230	3,611	8,320	1,893	15,054	1,425	3,761	1,579	605	7,370	6,765	5,186
Yugoslavia, 1945	497[e]	1,912	4,800	1,497	8,706	569	1,934	882	550	3,935	3,385	2,503
Bulgaria, 1946	585	2,005	8,784	870	12,244	598	1,883	1,669	308	4,458	4,150	2,481
Estimate for Lower Danube Basin, 1943–45 average	3,178	10,407	23,852	8,130	45,567	3,637	11,161	4,510	2,664	21,972	19,308	14,798

* Data for Hungary, 1941, 1943–45, from *34*, pp. 103, 129. Rumania, 1936 (Bessarabia, Northern Bukovina, and Northern Transylvania, 1935; see note *c*, below), from *36*, pp. 450–51, and *48*, pp. 56–62. Yugoslavia, 1936, 1939, 1945, from *37*, pp. 170–71; *39*, p. 34; p. 312, this volume (sheep); and *49*, pp. 117, 127, 131, 135. Bulgaria, 1934, 1946, from *7*, pp. 234–35, and *50*, p. 306. All other data from *42*, pp. 82–83, 124–25, 152–53, and *32*, Vol. III, pp. 20–23, 68–69, 128–29.

For Bulgaria and, presumably, Hungary the data refer to all livestock of the country. For Rumania and Yugoslavia no indications as to the scope of the enumerations have been found except that the 1936 figures for Rumania exclude livestock belonging to the army, and Yugoslavian figures for 1936 include only livestock on farms, and those for 1939 and 1945 include horses on farms only.

The conversion of livestock from natural units (heads), as given, to metabolic livestock units is explained in Appendix C, pp. 105–06.

[a] Grazing animals are horses, mules, cattle, buffaloes, and sheep; draft animals are horses, mules, cattle, and buffaloes.

[b] Average 1934 and 1939.

[c] Data for 1935 for Bessarabia, Northern Bukovina, and Northern Transylvania are used in adjusting Rumania in 1942, 1943, and 1945 to *de jacto* state territory basis (Northern Transylvania applies only to 1945).

[d] Including Bachka (not in accordance with the Territorial Scheme).

[e] Horses only (the number of mules, however, was insignificant).

TABLE XIV.—LIVESTOCK: AVERAGE LIVE WEIGHTS OF ANIMALS, BY COUNTRY AND KIND OF ANIMALS

PREWAR COMPOSITION OF THE NATIONAL HERD AS TO RACE, SEX, AND AGE*

(Rounded figures in kilograms; estimates marked by parentheses)

Country	Horses		Cows and oxen		Sheep		Pigs	
	Mature	Young	Mature	Young	Mature	Young	Mature	Young
Hungary:								
Trianon	(450)	(200)	450	200	35	15	120	25
Enlarged	(400)	(200)	(400)[a]	(200)	(35)	(15)	(110)[b]	(25)
Rumania	(350)	(200)	(300)	(150)	(30)	(10)	(100)	(25)
Yugoslavia	(350)	(200)	(300)	(150)	(30)	(10)	(100)	(25)
Bulgaria	(300)	(150)	250	150	30	10	100	25

* Data for Hungary from p. 177, this volume, and *12*, pp. 89, 93; Rumania from *48*, pp. 65–71; Yugoslavia from p. 312, this volume, and *21*, p. 79; Bulgaria from *51*, pp. 117–19.

[a] Rough estimate based on the arithmetic average of 450, 400, and 350 kilograms, weighted by the number of cattle (heads) in Trianon Hungary and in the new territories of Enlarged Hungary.

[b] Rough estimate based on the arithmetic average of 120 and 100 kilograms, weighted by the number of pigs (heads).

TABLE XV.—LIVESTOCK: ENERGY REQUIRED FOR BASAL METABOLISM AS A NONLINEAR FUNCTION OF LIVE WEIGHT, BY KIND OF ANIMALS*

(*Large calories*)

Horses[a]			Cattle			Sheep			Pigs		
Body weight	Basal metabolism requirements in 24 hours	Ratio of basal metabolism requirements acc. to body weight	Body weight	Requirements	Ratio	Body weight	Requirements	Ratio	Body weight	Requirements	Ratio
Kg.	Cal.	400 kg. = 1	Kg.	Cal.	250 kg. = 1	Kg.	Cal.	30 kg. = 1	Kg.	Cal.	100 kg. = 1
100	2,600	0.42	100	2,600	0.55	10	540	0.56	25	1,000	0.44
150	3,500	0.56	150	3,500	0.74	15	680	0.71	50	1,570	0.70
200	4,200	0.68	200	4,200	0.89	20	780	0.81	60	1,750	0.78
250	4,700	0.76	250	4,700	1.00				75	1,950	0.87
300	5,200	0.84	300	5,200	1.11	30	960	1.00	100	2,250	1.00
350	5,700	0.92	350	5,700	1.21	35	1,030	1.07	120	2,450	1.08
400	6,200	1.00	400	6,200	1.32	40	1,090	1.13	150	2,600	1.16
450	6,600	1.10	450	6,600	1.45						
500	7,000	1.13	500	7,000	1.49						
550	7,300	1.18	550	7,300	1.55						
600	7,600	1.23	600	7,600	1.62						

* This is a table published by A. M. Leroy (52, p. 264) for female and gelded animals. For some intermediate weights energy values have been interpolated.

From the viewpoint of feed supply the figures relate to the (physiologically) "net energy" of the feed intake (or to that of the body substance) consumed for basal metabolism. Ex post, i.e., speaking of the past, the physiologically "net energy" is equal to the total metabolized energy less metabolized energy lost in the "specific dynamic action"; it is metabolized energy physiologically utilized by the living organism. Ex ante, i.e., speaking of the future, the physiologically "net energy" of a feeding stuff is equal to its "metabolizable energy" (the energy of its metabolizable ingredients) less the energy which will be lost in the "specific dynamic action."

[a] Leroy's data for cattle are applied here also for horses.

TABLE XVI.—PHYSICAL YIELDS OF IMPORTANT FOOD AND FEED CROPS USED AS CONCENTRATED OR BULKY FODDER BY COUNTRY; AVERAGES 1934–38, 1940–42, 1943–45*

(Quintals per hectare of area harvested)

Country	Absolute figures			Index numbers (1934–38 = 100)	
	1934–38	1940–42	1943–45	1940–42	1943–45
			WHEAT		
Hungary	14.0	13.0	13.0	92.8	92.8
Rumania	9.7	7.0	9.3	72.2	95.9
Yugoslavia	11.4	8.9	10.1	78.1	88.6
Bulgaria	12.7	8.4	10.2	61.3	80.3
			MAIZE (corn)		
Hungary	19.9	16.7	16.7	83.9	83.9
Rumania	10.0	9.3	8.8	93.0	88.0
Yugoslavia	17.7	12.3	11.3	69.5	63.8
Bulgaria	11.8	10.1	6.7	85.6	56.8
			BARLEY		
Hungary	13.2	13.4	13.3	101.5	100.8
Rumania	6.6	7.2	7.3	109.1	110.6
Yugoslavia	9.6	7.9	8.0	82.3	83.3
Bulgaria	13.5	9.4	8.7	69.6	64.4
			POTATOES		
Hungary	73.3	78.1	75.5	106.5	103.0
Rumania	90.2	67.9	72.4	75.3	80.3
Yugoslavia	62.0	54.4	40.0	87.7	64.5
Bulgaria	60.5	64.0	39.7	105.8	65.6
			ALFALFA HAY		
Hungary	42.2	42.8	30.7	101.4	72.7
Rumania	32.9	26.8	20.1	81.4	61.1
Yugoslavia	38.4	36.1	25.0	94.0	65.1
Bulgaria	54.4	50.3	33.4	92.5	61.4
			PERMANENT MEADOW HAY		
Hungary	22.5[a]	26.0[b]	16.8	115.6	74.7
Rumania	19.2	16.0	14.2[c]	96.0	72.9
Yugoslavia	17.3	13.5	8.5	78.0	49.1
Bulgaria	24.6	24.0	14.6	97.6	59.3
			VETCH HAY		
Hungary	25.3	31.5	24.1	124.5	95.2
Bulgaria	19.7	28.1	18.7	142.6	94.9
			MANGELS		
Hungary	227.7	208.5	145.0	91.6	63.7
Yugoslavia	148.3	115.0	79.2	77.5	53.4
Bulgaria	241.8	173.3	118.1	71.7	48.8

* Data for Hungary, Rumania, Bulgaria: wheat, maize, barley, *32*, Vol. I; other crops, *32*, Vol. III, and *43*, except permanent meadow hay for Hungary 1940, *34*, p. 84, and for Rumania 1941–43, Table 7, p. 251, this volume. Data for Yugoslavia 1934–38 and 1940 from *37*, p, 16; wheat, maize, barley, 1945, Table 3, p. 346, this volume; other figures (1941–45) extrapolated in time or interpolated in space (the relative change assumed to be equal to the average of the relative changes in Hungary and Bulgaria).

The years are years of harvest. On the nature of the area see Table 4, p. 21.

[a] Average 1934–37.

[b] Figure for 1940, for Enlarged Hungary.

[c] Average of two years, 1943 and 1945.

TABLE XVII.—AREAS SOWN OR AREAS HARVESTED OF PRINCIPAL FOOD CROPS BY CROP AND COUNTRY; AVERAGES FOR DIFFERENT YEARS OF THE PERIODS CONSIDERED*

(Thousand hectares; years of harvest in all cases)

Crop	Hungary		Rumania			Yugoslavia				Bulgaria		
	Area harvested		Area "cultivated"			Area sown	Area harvested			Area sown		
	1934–38	1941–43	1935–39	1945	1941–43	1935–39	1940	1945[a]	1946	1936–39	1941–43	1944–45
Wheat	1,589	2,285	3,490	2,081	3,100	2,214	2,097	1,175	2,021	1,313	1,325	1,313
Rye	631	680	439	118	80	261	255	150	201	192	172	161
Meslin	—	—	—	—	—	67	...	...	...	105	55	53
Rice	...	...	1[b]	4	2	4	...	...	...	8	13	9
Sorghum	—	—	12	6	9[c]	—	—	—	—	—	—	—
Maize	1,164	1,766	5,097	3,415	3,277	2,774	2,827	2,401	2,437	684	821	740
Barley	459	604	1,424	698	578	429	405	324	242	220	331	182
Oats	219	453	724	767	496	370	352	436	285	132	176	145
Spelt	—	—	—	—	—	17	...	...	...	9	12	15
Millet	8	33	49	26	64	34	...	...	...	6	31	6
Sunflower seed	160	98	191	346	208	11	...	...	...	173	173	139
Rapeseed	11	10	91	11	19	19	...	...	...	11	4	2
Soybeans	—	24	65	—	9	2	...	...	...	14	42	6
Dry beans	402	9	1,086	763	816	140	...	...	...	201[d]	202	203
Lentils	14	5	18	7	15[c]	3	...	...	...	5	9	16
Peas	27	79	46	151	194	5	...	...	...	1	3	...
Potatoes	316	401	228	262	185	267	273	...	150	18	33	33

* Data for Hungary 1934–38 from *32*, Vol. I; 1941–43, *41*, pp. 38, 62, 66, and Appendix Table IV, p. 222, this volume.

Rumania 1935–38 from *36*, pp. 408 ff.; 1939, 1941–43, 1945, *32*, Vol. II, p. 124; Bessarabia, Northern Bukovina, Southern Dobruja, 1939, *32*, Vol. I, p. 234; Northern Transylvania, Southern Dobruja, 1937, *35*, pp. 52–65.

Yugoslavia 1935–39, *37*, pp. 160–63; 1940, *32*, Vol. I; 1945, Table 3, p. 346, this volume; 1946, *39*, pp. 31, 33.

Bulgaria, *40*, pp. 256–58, and Appendix Table XI, p. 453, this volume.

Except for Rumania 1941–43, all data refer to the state territories as defined in the Territorial Scheme (p. 102). However, for the computation of energy value of seed used they need adjustment when there is a difference in the state territory between the year of sowing and the year of harvest (e.g., Hungary 1941, Bulgaria 1941).

[a] It is not certain whether the data for 1945 refer to area harvested or sown.

[b] 1939 only.

[c] 1941 only.

[d] Average 1937–39.

TABLE XVIII.—SEEDING RATES OF PRINCIPAL FOOD CROPS, BY CROP AND COUNTRY; PREWAR FOR THE DANUBIAN COUNTRIES, POSTWAR FOR THE UNITED STATES*

(*Kilograms per hectare*)

Crop	Hungary 1934–38 average	Rumania 1932–35 average	Yugoslavia 1934–38 average	Bulgaria 1938–39 average	U.S. postwar usual rates
Wheat	175	177	190	217	79[a]
Rye	170	161	185	186	80
Rice	183[b]	183[b]	183[b]	183	114[c]
Maize	30	24	31	34	8
Barley	164	150	170	198	89
Oats	145	137	150	146	86
Spelt	—	—	141[b]	141	—
Millet (proso)	31[b]	31[b]	31[b]	31	—
Potatoes	1,400	1,500[d]	1,500	1,600	130
	Official allowances for seeding in Germany's war economy (averages)				
Rapeseed		10			—
Soybeans		70			85
Dry beans		110			55
Peas		150			164

* Data for Hungary from *53*, p. 71, and (potatoes) *17*, p. 147; Rumania, *17*, p. 147; Yugoslavia, *53*, pp. 143–44, and (maize) *17*, p. 147; Bulgaria, *54*, pp. 16–24, and *55*, p. 21; United States, *56*, p. 325; Germany, information from Dr. Karl Brandt of the Food Research Institute.

In the computations, rates were substituted as follows: maize for sorghum, wheat for meslin, rape for sunflower, peas for lentils.

[a] Winter wheat.

[b] Bulgarian rate.

[c] Louisiana.

[d] Yugoslav rate.

TABLE XIX.—ENERGY EXPENDITURE FOR ANIMAL WORK IN AGRICULTURE, BASED ON THEORETICAL FEEDING STANDARDS AND PRACTICAL WORK STANDARDS BY COUNTRY; AVERAGES 1934–38, 1940–42, AND 1943–45*

Country (State territory as defined in Appendix C, note 1)	Cropland (*1,000 hectares*) (1)	Workdays of metabolic livestock units annually: Per hectare (2)	Workdays of metabolic livestock units annually: Total number (*millions*) (3) = (1) × (2)	Necessary additional fodder annually in: Fodder units (*millions*) (4)	Necessary additional fodder annually in: Net energy (*billion large calories*) (5)	Draft animals in metabolic livestock units (*1,000*) (6)	Workdays of metabolic livestock units annually per draft animal (*metabolic livestock units*) (7) = (3) ÷ (6)
				PREWAR PERIOD: 1934–38			
Hungary	6,595	36	237.4	356.1	569.8	2,247[a]	105.7
Rumania	16,311	30	489.3	733.9	1,174.2	6,840[a]	71.5
Yugoslavia	10,060	31	311.8	467.7	748.3	5,572[a]	56.0
Bulgaria	4,559	32	145.9	218.8	350.1	2,275[b]	64.1
Lower Danube Basin	37,525		1,184.4	1,776.5	2,842.4	16,934	69.9
				FIRST WAR TRIENNIUM: 1940–42			
Hungary	9,786	36	352.3	528.4	845.4	5,663	62.2
Rumania	12,701	30	381.0	571.5	914.4	5,724	66.6
Yugoslavia	9,608	31	297.8	446.7	714.7	4,148	71.8
Bulgaria	4,612	32	147.6	221.4	354.2	2,492	59.2
Lower Danube Basin	36,707		1,178.7	1,768.0	2,828.7	18,027	65.4
				SECOND WAR TRIENNIUM: 1943–45			
Hungary	9,326	36	335.7	503.6	805.8	4,628	72.5
Rumania	12,757	30	382.7	574.0	918.4	5,186	73.8
Yugoslavia	9,014	31	279.4	419.1	670.6	2,503	111.6
Bulgaria	4,715	32	150.9	226.4	362.2	2,481	60.8
Lower Danube Basin	35,812		1,148.7	1,723.1	2,757.0	14,798	77.6

* Data for column 1 from Appendix Tables XX–XXIII; column 2 from *51*, p. 123; column 6 from Appendix Table XIII, p. 124. The computation of the figures of columns 4 and 5 is explained on pp. 105 ff.

[a] 1936 only.

[b] Average of years 1934 and 1939.

TABLE XX.—HUNGARY: LAND UTILIZATION 1937/38 TO 1948/49 (ARABLE LAND, CROPLAND, AND AGRICULTURAL LAND), BY CROP YEAR; OFFICIAL ENUMERATION DATA AND ROUGH ESTIMATES (IN PARENTHESES)

(Thousand hectares)

Crop-growing year, State territory	Agricultural land										Surface of State territory according to Appendix C, note 1
	Cropland										
	Arable land					Tree and bush crops = vineyards and orchards	Permanent meadows	Total	Pastures	Total	
	Area sown										
	Area harvested[a]	Crop failure[b]	Total	Fallow (temporary)	Total						
1937/38—Trianon	...	...	5,507	104[c]	5,611[c]	338[d]	646[c]	6,595[e]	965[f]	7,560[f]	9,307[g]
1938/39—Trianon	5,479	36	5,515	101[h]	5,616[h]	340[h]	646[h]	6,602	965[h]	7,567	9,307
—Enlarged I	6,172	47	6,219[b]	116[b]	6,335	370[i]	738[j]	7,443	1,064[i]	8,507	10,500
1939/40—Trianon	5,116	240	5,356	264[h]	5,620[h]	340[h]	646[h]	6,615	965[h]	7,580	9,307
—Enlarged II	5,972	256	6,228[b]	300[b]	6,528	383[k]	913[j]	7,824	1,221[k]	9,047	11,706
1940/41—Trianon	5,085	42	5,127	494[h]	5,621[h]	345[h]	642[h]	6,608	965[h]	7,573	9,307
—Enlarged IV	7,857	59	7,916[b]	749[b]	8,665	481[f]	1,610[j]	10,756	1,854[f]	12,610	17,164
1941/42—Trianon	5,193	70	5,263	360[h]	5,623[h]	348[h]	643[h]	6,614	965[h]	7,579	9,307
—Enlarged IV	7,938	90	8,028[b]	650[b]	8,678	(481)[l]	1,618[j]	10,777	(1,854)[l]	(12,631)	17,164
1942/43—Trianon	5,334	201	5,535	69[h]	5,604[h]	355[h]	647[h]	6,606	965[h]	7,571	9,307
—Enlarged IV	8,094	273	8,367[b]	242[b]	8,609	(481)[l]	1,628[j]	10,718	(1,854)[l]	(12,572)	17,164
1943/44—Trianon	...	...	5,512	78[h]	5,590[h]	(355)[m]	645[h]	(6,590)	965[h]	(7,555)	9,307
—Enlarged IV	...	...	...	...	(8,587)[n]	...	...	(10,692)[n]	...	(12,545)[n]	17,164
1944/45—Trianon	4,566	231	4,797	775[h]	5,572[h]	359[h]	638[h]	6,569	965[h]	7,534	9,307
1945/46—Trianon	4,858	355	5,213[b]	339[b]	5,552	347[o]	627[j]	6,526	949[o]	7,475	9,307
1946/47—Trianon	5,120	262	5,382[b]	155[b]	5,537	308[p]	(637)[q]	(6,482)	(949)[r]	(7,431)	9,307
1948/49—Paris	...	...	...	...	...	...	(617)[s]	(6,207)[e]	(949)[r]	7,156[t]	9,301[u]

[a] Total area sown, less crop failure. [b] From Table 6, p. 167.

[c] From *42*, pp. 78–80. The figure for arable land given in this source is 11,000 hectares lower than the apparently revised figure shown in Table 4, p. 164; it is retained here because the revised figure appeared out of line with subsequent years.

[d] Total cropland, less arable land and permanent meadows. [e] Total agricultural land, less pastures. [f] From Table 5, p. 165. [g] From *57*, p. 2.

[h] From *32*, Vol. III, pp. 62 ff. [i] Trianon Hungary as given, plus Felvidék from Table 5, p. 165. [j] From Table 9, p. 173.

[k] Trianon Hungary as given, plus Felvidék and Kárpátalja from Table 5, p. 165. [l] Figure for 1940/41 accepted. [m] Figure for 1942/43 accepted.

[n] Based on the proportion, Enlarged Hungary 1944 : Enlarged Hungary 1943 = Trianon Hungary 1944 : Trianon Hungary 1943.

[o] From *64*, p. 109. [p] From *41*, pp. 3, 8.

[q] The figure 637,000 hectares is obtained by deducting 949,000 hectares (area of pastures, 1945/46) from 1,586,000 hectares, the figure for permanent meadows and pastures combined in 1946/47, given in *41*, p. 8.

[r] Figure for 1945/46 accepted.

[s] The figure 617,000 hectares is obtained by deducting 949,000 hectares (as above, [q]) from 1,556,000 hectares, the figure for permanent meadows and pastures combined in 1948/49, given in *58*, p. 86.

[t] From *58*, p. 86. [u] From *65*, p. 27.

TABLE XXI.—RUMANIA: LAND UTILIZATION 1937/38 TO 1947/48 (ARABLE LAND, CROPLAND, AND AGRICULTURAL LAND), BY CROP YEAR; OFFICIAL ENUMERATION DATA AND ROUGH ESTIMATES (IN PARENTHESES)

(*Thousand hectares*)

Crop-growing year	Departments	Agricultural land										Surface of State territories according to Appendix C, note 1
		Cropland										
		Arable land					Tree and bush crops = vineyards and orchards	Permanent meadows	Total	Pastures	Total	
		Area sown			Fallow (temporary)	Total						
		Area harvested	Crop failure	Total								
1937/38	71	...	...	13,104[a]	770[b]	13,874[b]	650[b]	1,787[b]	16,311	3,260[b]	19,571	29,505[c]
1938/39	71	12,852[d]	...	...	536[b]	13,388[c,e]	642[c]	1,456[c]	15,486	(3,260)[f]	(18,746)	29,505
1939/40	71	12,123[g]	...	...	(536)[h]	(12,659)	(642)[h]	(1,456)[h]	(14,757)	(3,260)[h]	(18,017)	29,505
	48	7,945[d]	...	...	389[c]	8,334[c,e]	424[i]	1,019[c]	9,777	1,993[c]	11,770	19,428[j]
1940/41	59	(11,268)[d]	...	...	(359)[k]	(11,627)[e,k]	(544)[k]	(1,136)[k]	(13,307)	(2,642)[k]	(15,769)	24,422[j]
	48	8,067[d]	...	...	296[c]	8,363[c,e]	397[i]	1,074[i]	9,834	(1,993)[i]	(11,827)	19,428
1941/42	59	...	...	(11,070)[a]	(773)[m]	(11,843)[m]	(536)[m]	(1,132)[m]	(13,511)	(2,678)[m]	(16,189)	24,422
	48	...	...	7,869[a]	710[c]	8,579[c]	389[i]	1,070[i]	10,038	2,209[i]	12,247	19,428
1942/43	59	...	...	(11,339)[a]	(292)[m]	(11,631)[m]	(550)[m]	(1,132)[n]	(13,313)	(2,678)[n]	(15,991)	24,422
	48	...	...	8,138[a]	229[c]	8,367	403[i]	(1,070)[n]	(9,840)	(2,209)[n]	(12,049)	19,428
1943/44	59	...	...	...	...	(11,607)[e,o]	(560)[p]	(1,132)[p]	(13,299)	(2,678)[p]	(15,977)	24,422
	48	...	...	...	...	(8,343)[e,q]	(403)[h]	(1,070)[n]	(9,816)	(2,209)[n]	(12,025)	19,428
	58	9,435[d]	...	...	170[c]	9,605[c]	(458)[r]	(1,429)[r]	(11,492)	(2,857)[r]	(14,349)	23,738[s]
1944/45	58	...	...	9,111[a]	662[c]	9,773	458[c]	(1,429)[c]	(11,660)	(2,857)[c]	14,517	23,738
1945/46	...	...	...	...	...	...	...	...	...	...	...	...
1946/47	58	...	...	...	...	(8,959)[t]	(331)[u]	(1,487)[u]	(10,787)	(2,429)[u]	(13,216)	23,738
1947/48	58	...	...	...	...	8,791[v]	331[v]	1,487[v]	10,609	2,429[v]	13,038	23,738

[a] Per difference. *Published data* for 1937/38 indicate that "arable land" includes crop failure (*35*, p. 22 in connection with p. 40; *36*, p. 406).

[b] From *36*, p. 405.

[c] From *32*, Vol. III, pp. 124 ff.

[d] Per difference. That "arable land" for 1938/39, 1939/40, 1940/41, and 1943/44 does not include crop failure follows from *32*, Vol. III, pp. 124–25.

[e] Arable land excluding crop failure (*see* [d]).

[f] Figure for 1937/38 accepted, since the figure published in *32*, Vol. III, is incredibly low.

[g] This is 92 percent of 13,177,000 hectares, total area sown in 1934/35–1938/39 average (*36*, p. 405). According to data of the Institutul Central de Statistică, area under cereals in 48 departments in 1939/40 was 8 percent below the 1934/35–1938/39 level.

[h] Figure for the preceding year accepted.

[i] See Tables 5 and 6, pp. 248, 250, this volume.

[j] Territory of 48 departments, 19,428,000 hectares = territory of 71 departments, 29,505,000 hectares, minus territory of Bessarabia, Northern Bukovina, Northern Transylvania, and Southern Dobruja, 10,077,000. Territory of 59 departments = 19,428,000 hectares plus territory of Bessarabia and Northern Bukovina, *4,994,000 hectares* (see "*Territorial Changes*," p. 104, and note [c] above).

[k] The 1940/41 area for 48 departments augmented by the respective area for Bessarabia and Northern Bukovina in 1936/37 (*35*, pp. 52–53).

[l] Figure for 1939/40 accepted.

[m] The 1942/43 area for 48 departments augmented by the respective area for Bessarabia and Northern Bukovina in 1936/37 (*35*, pp. 52–53).

[n] Figure for 1941/42 accepted.

[o] The total area of permanent meadows and pastures, taken together, namely 4,286,000 hectares (*32*, Vol. III, p. 126) in 1944/45, has been divided in proportion 1 : 2 between the two categories of land (suggested by their ratio in 1939/40 and 1941/42).

[p] The 1943/44 area for 48 departments plus the respective area for Bessarabia and Northern Bukovina in 1936/37 (*35*, pp. 52–53).

[q] The 1943/44 area for 58 departments minus the respective area for Northern Transylvania in 1936/37 (*35*, pp. 52–53).

[r] Figure for 1944/45 accepted.

[s] From *59*, p. 83.

[t] The figure 9,300,000 hectares for 1946/47, published in *41*, p. 13, minus 331,000 hectares tree and bush crops in 1947/48.

[u] Figure for 1947/48 accepted.

[v] From *30*, p. 22.

TABLE XXII.—YUGOSLAVIA: LAND UTILIZATION 1937/38 TO 1948/49 (ARABLE LAND, CROPLAND, AND AGRICULTURAL LAND), BY CROP YEAR; OFFICIAL ENUMERATION RESULTS AND ROUGH ESTIMATES (IN PARENTHESES)

(*Thousand hectares*)

Crop-growing year, State territory	Agricultural land										Surface of State territory according to Appendix C, note 1
	Cropland								Pastures	Total	
	Arable land					Tree and bush crops = vineyards and orchards	Permanent meadows	Total			
	Area sown			Fallow (temporary)	Total						
	Area harvested	Crop failure	Total								
1937/38 Foundation ..	(6,939)[a]	(215)[b]	7,154[c]	398[c]	7,552	667[c]	1,841[c]	10,060	4,377[c]	14,437	24,754[c]
1938/39 Foundation ..	(7,018)[a]	(217)[b]	7,235[c]	379[c]	7,614	677[c]	1,869[c]	10,160	4,293[c]	14,453	24,754
1939/40 Foundation ..	...	...	(7,266)[d]	(379)	(7,645)	(677)[e]	(1,869)[e]	(10,191)	(4,293)[e]	14,484	24,754
1942/43 Foundation ..	...	...	(6,743)[f]	(902)[b]	(7,645)[g]	(677)[e]	(1,869)[e]	(10,191)	(4,293)[e]	(14,484)	24,754
Less Bachka and Southern Baranya ..	...	...	(5,964)[b]	(893)[h]	(6,857)[i]	(648)[i]	(1,812)[i]	(9,317)	(4,198)[i]	(13,515)	23,607[j]
1944/45 Foundation ..	...	...	(5,499)[k]	(902)	(6,401)	(593)[m]	(1,869)[e]	(8,863)	...	...	24,754
1945/46 Foundation ..	...	...	(6,221)[n]	(640)[b]	(6,861)[o]	(747)[o]	(1,907)[o]	(9,515)	...	...	24,754
1948/49 Foundation plus Istria	...	...	...	...	7,321[p]	900[b]	1,945[p]	10,166[b]	3,718[p]	13,884[p]	25,688[q]

[a] In 1939, area harvested was 97 percent of area sown. The ratio is computed from data for individual crops (*37*, pp. 156–61).

[b] Per difference. [c] From *37*, pp. 2, 154 ff.

[d] Area sown for 1938/39, 7,235,000 hectares, multiplied by 1.0043, the index number of change in area harvested of principal crops from 1939 to 1940 (*32*, Vol. I; *37*, pp. 156–59). [e] Figure for 1938/39 accepted.

[f] Area sown for 1938/39, 7,235,000 hectares, multiplied by 0.932, the index number of change in area harvested from 1939 to 1943, for cereals only. The index number of change in area of cereals harvested is the ratio of area of cereals harvested in 1943, 5,629,000 hectares, and area of cereals harvested in 1939, 6,041,000 hectares (*37*). The area of cereals harvested in 1943 is the quotient of quantity of cereals harvested in 1943, 52,346,000 quintals, and average yield of cereals per hectare in 1943, 9.3 quintals. The quantity of cereals harvested in 1943 has been obtained by multiplying average quantity of cereals harvested in 1935–37, 79,313,000 quintals (*37*), by the index number of change in quantity of cereals harvested from 1935–37 to 1943, 0.66 (based on Bićanić's data; see Methodological Note to Table 17, column 1, pp. 104–05). The average yield of cereals per hectare in 1943 has been derived from the average yield in 1939 with the help of a general yield index for principal cereal crops, constructed according to Laspeyres' formula (for data on yields of individual crops see Appendix Table XVI, p. 127; data on quantities from source *37*).

[g] Figure for 1939/40 accepted.

[h] The half of fallow area in Vojvodina (comprising Bachka, Southern Baranya, and Western Banat) for 1938/39 deducted from 902,000 hectares. The area of fallow in Vojvodina, 18,000 hectares, has been ascertained as 2 percent of the area of fallow in Yugoslavia in 1938/39 (*37*).

[i] Délvidék areas for arable land, 788,000 hectares; vineyards and orchards, 29,000 hectares; permanent meadows, 57,000 hectares; and pastures, 95,000 hectares, deducted from the respective areas of the Foundation territory (Table 5, p. 165). [j] Territory of Délvidék, 1,147,000 hectares, deducted from Foundation territory (*57*, p. 2).

[k] Like [d]. Index number = 0.76, for area harvested of wheat, rye, maize, and sugar beets (*37*). [l] Figure for 1942/43 accepted.

[m] War destruction of vineyards, 84,000 hectares, deducted from 677,000 hectares, the figure for 1938/39 (*39*, p. 6).

[n] Like [d]. Index number = 0.86, for area harvested of wheat, rye, maize, barley, sugar beets, and potatoes (*39*, pp. 31, 33; *37*).

[o] Arithmetic mean of 1948/49 figure and 1944/45 figure. [p] From *60*, pp. 5, 40. [q] From *58*, p. 31.

TABLE XXIII.—BULGARIA: LAND UTILIZATION 1937/38 TO 1946/47 (ARABLE LAND, CROPLAND, AND AGRICULTURAL LAND), BY CROP YEAR; OFFICIAL ENUMERATION RESULTS*

(Thousand hectares)

Crop-growing year	Agricultural land								Surface of State territory according to Appendix C, note 1
	Cropland						Pastures	Total	
	Arable land			Tree and bush crops = vineyards and orchards	Permanent meadows	Total			
	Area sown	Fallow (temporary)	Total						
1937/38.....	3,601	480	4,081	170	308	4,559	960[a]	5,519	10,315
1938/39.....	3,286	520	3,806	192	293	4,291	960[a]	5,251	10,315
1939/40.....	3,258	534	3,792	203	295	4,290	960[a]	5,250	10,315
1940/41.....	3,766	505	4,271	216	294	4,781	1,030[b]	5,811	11,084
1941/42.....	3,761	490	4,251	214	299	4,764	1,030[b]	5,794	11,084
1942/43.....	3,769	482	4,251	211	293	4,755	1,030[b]	5,785	11,084
1943/44.....	3,640	570	4,210	214	285	4,709	1,030[b]	5,739	11,084
1944/45.....	3,490	695	4,185	219	276	4,680	1,030[b]	5,710	11,084
1945/46.....	3,482	647	4,129	216	273	4,618	1,030[b]	5,648	11,084
1946/47.....	3,508	578	4,086	200	251	4,537	1,030[b]	5,567	11,084

* Data from *7*, *40*, *50*.

[a] From *6*, p. 87.

[b] To 960,000 hectares have been added 70,000 hectares of *merá* lands (village commons) in Southern Dobruja (*51*, p. 124).

TABLE XXIV.—NET COMMERCIAL EXPORTS OF FOOD AND FEED COMMODITIES, BY COMMODITY AND EXPORTING COUNTRY, AVERAGES 1934–38, 1940–42, AND 1943–45*

Commodity	Hungary			Rumania			Yugoslavia (Serbia and Croatia in war period)			Bulgaria		
	1934–38	1940–42	1943–45	1934–38	1940–42	1943/44	1934–38	1940–42[a]	1943–45[a]	1934–38	1940–42	1943–45
	Thousand quintals except as otherwise indicated											
Foods												
Wheat	4,302	1,878	662	5,490	1,369	199	1,701	1,003	550[b]	994	570	117
Wheat flour	496	672	397	2	0	2	54	...	...	16	13	0
Rye	643	67	18	642	239	0	32	...	...	49	15	+113
Rye flour	3	0	13	0	0	0	0	0	0	1	0	0
Rice	+196	+129	0	+257	+ 48	0	+214	...	...	0	0	0
Maize	+265	164	260	5,403	2,345	81	4,691	367	437[b]	785	570	78
Barley	82	48	48	3,047	181	344	79	7	93	105	+ 25	+ 41
Oats	43	76	0	103	30	20	57	0	+ 17	7	0	+ 49
Millet (proso)	...	...	...	86	...	...	...	...	...	7[c]	45[d]	...
Sugar	196	12	+ 9	+ 24	+116	2	0	7	+128	5	+146	+ 37
Rapeseed	41	0	0	180	0	0	0	...	...	46	0	0
Rapeseed oil[e]	373	...	...	86	11	0	+ 3	...	...	112	17	0
Sunflower seed	38	32	142	333	83	142	+ 39	...	...	314	48	0
Sunflower oil[e]	361	797	6,795	4,057	170	95	0	1.8[f]	7[f]	2,313	1,079	+739
Soybeans	0	0	0	0	...	...	10	0	0	54	312	26
Dry beans	169	182	100	500	65	178	299	...	...	172	186	164
Lentils	...	...	...	64	...	...	...	...	...	...	...	...
Peas	...	379[g]	404[h]	189	...	...	...	...	...	...	...	...
Potatoes	578	188	+ 35	4	+ 4	180	3	0	+167	10	3	11
Milk[e]	12	234	0	+ 10	+ 2[i]	...	271	...	...	0	6	0
Eggs[e]	12,175	7,972	1,381	9,285	4,202	465	12,029	...	...	14,499	18,362	2,167
Egg products[e]	289	604	268	205	38	10	959	...	...	1	0	0
Butter[e]	4,136	67	0	98	50	10	128	...	...	45	4	0
Cheese[e]	384	79	0	22	23	+ 85	1,886	...	+666	1,612	764	67
Lard[e]	...	...	...	...	...	...	7,500[j]	47	0	933	150[d]	...
Feeds												
Vetch seed	63[k]	91[g]	15	223	...	...	...	...	...	57[c]	68[d]	...
Oilseed cakes	+143	+115	+106	1,001	821	498	...	...	...	376	230	10
Total EMM Content of Foods:	*American billion large calories*											
of vegetable origin	1,895	1,149	730	5,356	1,424	323	2,322	471	303	867	537	34
of animal origin	49	12	2	14	6	1	90	0	+ 3	35	30	3
in general	1,944	1,161	732	5,370	1,430	324	2,412	471	300	902	567	37

* Data for all four countries from *32*, Vol. II, with the following exceptions: Hungary, peas and vetch, App. Table XIII, p. 228, this volume. Rumania, millet, lentils, peas, vetch, *36*, pp. 628–29. Yugoslavia, 1940–45, *61*, pp. 183–84, and p. 345, this volume; sugar and cheese, *62*, pp. 22, 139. Bulgaria, millet, vetch, lard, *40*, pp. 551, 555; *7*, pp. 534, 538.

After the food-energy balance had been computed, it was found from a publication of the Statistisches Reichsamt, printed as a loose-leaf edition and classified as secret (*63*, p. 172), that for the war-economy year August 1944–July 1945 the following quantities were scheduled as delivery obligations (*Voranschlag*) from Serbia-Banat to Germany, including the Wehrmacht (thousand tons): bread and feed grain, 300; potatoes, 12; sugar, 8. It is not certain whether these obligations were fulfilled or not.

Plus sign (+) indicates "net import."

[a] Including deliveries to the German Wehrmacht.

[b] Original figures for wheat and maize for 1944 corrected from 1,150 to 1,500 and from 260 to 1,000 thousand quintals, respectively, relying upon *61*, p. 184.

[c] Average 1935–38. [d] Average 1940–41. [e] Metric tons. [f] Delivered in seed. [g] Data for 1942 only.

[h] Average 1943–44. [i] Data for 1940 only. [j] Average 1937–38. [k] Data for 1938 only.

TABLE XXV.—TIME REFERENCE FOR TABLES IN CHAPTER 4*

Economic variable	Hungary			Rumania			Yugoslavia			Bulgaria		
	Prewar	First W.T.	Second W.T.	Prewar	First W.T.	Second W.T.	Prewar	First W.T.	Second W.T.	Prewar	First W.T.	Second W.T.
Quantity of food crops harvested in weight units	34–38	40–42	43–45	34–38	40–42	43–45	34–38	40	45	35–38	40–42	43–45
Energy value of food crop harvest.	34–38	40–42	43–45	34–38	40–42	43–45	34–38	40	43, 43, 45	35–38	40–42	43–45
Livestock number, in natural or metabolic units	Spring? 36	Spring 41	Spring 43–45	Month unknown 36	39, 41, 42	43, 45	Dec? 36	Dec. 39, 45	Dec. 45	Dec. 34, 39	Aug. 41	Dec. 46
Index of bulky fodder yields per hectare	34–38	40–42	43–45	34–38	40–42	43–45	34–38	40–42	43–45	34–38	40–42	43–45
Energy value of bulky fodder harvest	Affected by livestock number and bulky fodder yields per hectare											
Seed used												
a) Seeding rates	34–38	34–38	34–38	31–35	31–35	31–35	34–38	34–38	34–38	38/39	38/39	38/39
b) Area sown	33–37	40–42	42, 42, 45	34–38	40–42	44	34–38	39, 42, 42	42, 44, 45	35–38	40–42	43–44
Energy requirements of draft animals for basal metabolism	36	41	43–45	36	39, 41, 42	43, 45	36	39, 45	45	34, 39	41	46
Energy expenditure for animal work in agriculture	Depends entirely on cropland											
Cropland	37/38	39/40–41/42	42/43–44/45	37/38	39/40–41/42	42/43–44/45	37/38	39/40, 42/43, 42/43	42/43, 44/45, 44/45	37/38	39/40–41/42	42/43–44/45
Population (midyear as a rule)	36	40–42	43–45	36	40–42	43–45	36	40–42	42, 42, 45	36	40–42	43–45
Energy requirements for human consumption of vegetable products depend on population (see above) and consumption per head per year:	See Bulgaria			See Bulgaria			See Bulgaria			38/39[a]	39–43	39–43
Energy requirements of nondraft farm animals for basal metabolism	36	41	43–45	36	39, 41, 42	43, 45	36	39, 45	45	34, 39	41	46
Net commercial exports of food and food commodities	34–38	40–42	43–45	34–38	40–42	43–45	34–38	40–42	43–45	34–38	40–42	43–45

* Calendar or crop-growing years to which the data in the tables refer. Dashes indicate averages for periods; commas, averages of single years; slashes, crop-growing years; the abbreviation W.T. stands for war triennium.

[a] Household budget year.

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AGRICULTURE AND FOOD IN HUNGARY DURING WORLD WAR II

By

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(Edited by S. D. ZAGOROFF and P. STANLEY KING)

INTRODUCTION

Until World War I, Hungary was a partner in the Austro-Hungarian Monarchy by the terms of an agreement reached in 1867 with the dynasty and Austria. Each state was governed separately and had its own government and legislation, but the person of the ruler was the same for both countries. The Foreign Office and the Army and Navy were common institutions of the two states, which provided, according to annual agreements, the funds necessary for their activities. There was a tariff union between Austria and Hungary as well as a commercial agreement, and a common currency was used. Thus Hungary was included in a greater economic entity—the Austro-Hungarian Monarchy with a total population in 1910 of about 51 million, of which 20.8 million were living in Hungary, including Croatia-Slavonia. Notwithstanding all the treaties, there is no doubt that Hungary's interests were not duly respected, Austria taking the position of the predominant partner in the Empire. Economically, Austria was decidedly favored to the disadvantage of Hungary, whose industry was unable to develop properly under that regime.

As a part of the Austro-Hungarian Empire, Hungary's territory—referred to in this study as *Great Hungary*—occupied practically the entire middle basin of the Danube, or the Carpathian Basin, and included the dependent kingdom of Croatia-Slavonia, and also the port of Fiume. It comprised an area of 325,411 square kilometers, of which Croatia-Slavonia accounted for 42,541.

With the defeat of the Central Powers in 1918, the Austro-Hungarian Empire was dismembered and Hungary emerged as a separate state, much reduced in size. By the Treaty of Trianon, signed June 4, 1920, it lost to neighboring states—mainly Czechoslovakia, Rumania, and Yugoslavia—71.5 percent of the territory it had embraced as Great Hungary.

Except for a minor accession in 1921, the boundaries of *Trianon Hungary* remained unchanged until 1938. Reannexations in that year and the three years following increased Hungary's territory from 93,073 square kilometers to 171,640. The Treaty of Paris following World War II nullified these gains and re-established the boundaries of Trianon Hungary, excluding a minute area ceded to Czechoslovakia.

The following listing shows in detail Hungary's territorial losses and recoveries from 1920 to 1947 (in sq. kms.):

Great Hungary (until 1918)	325,411
Lost by Treaty of Trianon (1920) to:	
Czechoslovakia	61,772
Rumania	102,787
Yugoslavia	63,092
Austria	4,077
Poland	589
Italy	21
Trianon Hungary (1920–21)	92,963
Recovered under Sopron Plebiscite, 1921	110
Trianon Hungary (1921–38)	93,073
Reannexed (1938–41):	
Felvidék (Upper Region), from Czechoslovakia, November 1938	11,927
Kárpátalja (Subcarpathian Region), from Czechoslovakia, March 1939	12,061
Erdély (Northern Transylvania), from Rumania, September 1940	43,104
Délvidék (Southern Region), from Yugoslavia, April 1941	11,475
Hungary, 1941–45	171,640
The Treaty of Paris (Feb. 10, 1947) re-established the territory of Trianon Hungary, viz.	93,073
Pozsony district ceded to Czechoslovakia	62
Hungary, since 1947	93,011

The territory of present-day Hungary, comprising about 35,900 square miles, is somewhat smaller than the state of Ohio, but has a population near that of Pennsylvania—9,316,613 in 1941.

MAIN PHYSICAL FEATURES

Relief and geological structure.—Hungary lies in Central Europe in the middle of a large basin between the Alps and the Carpathians. The greater part of the country consists of a large plain (Alföld) with an average altitude of only some 100 meters above sea level, with lowlands along the river Tisza, which are subject to floods. This plain is divided by the ranges of Középhegység (Central Mountains) into the Kis-Alföld (Little Plain) in the northwest, and the Nagy-Alföld (Great Plain).

An alternative geographical division is provided by the courses of the two principal rivers, the Danube (Duna) and the Tisza:

Dunántul (Transdanubia)—the area west of the Danube
Duna-Tisza-Köze (the Land Between the Danube and the Tisza)—the area between the two principal rivers
Tiszántul (Transtisza)—the area east of the river Tisza to the foothills of Transylvania

A glance at a relief map makes clear the unity of the Carpathian mountain system outlining the basin of the Tisza River in a semicircle, which the French geographer Himly called the "Magyar system." The great arc of the Carpathians, extending to a length of some eight hundred miles, circumvallates the Hungarian lowlands (Alföld) like a natural fortified wall. The area of this mountain-walled basin is about 135,000 square miles. It forms a hydrographic unit, with a drainage system centering upon the Danube into which all but two insignificant streams empty inside the basin itself. Within the Carpathian Basin one may define certain transitions rather than separate regions of different character. Only Transylvania, which is also in the Carpathian Basin but is now a part of Rumania, may be treated as a distinct entity within the larger one. Geographers, emphasizing the unity of this system, point out that the products of the different regions supplement one another—the agricultural products of the lowlands or plains and the mining and timber of the surrounding mountains, for instance—and that intensive agriculture on the plains cannot be pursued without irrigation, which, in turn, would be hardly possible without the storage possibilities of Kárpátalja, now incorporated in the Soviet Union. A distinguished geographer, Count Paul Teleki, states (*1*, pp. 14–15) that "the great depression surrounded by the folds of the Carpathians forms the most perfectly closed basin of Europe." Those facts explain many things in the formation of economic life within the Carpathian Basin, including food and agriculture.

Until 80 years ago, substantial areas of the Nagy-Alföld were grassy steppes, known as *puszta*, devoted to the raising of horses and cattle, but agriculture has encroached on these wide stretches, so that large areas now bear wheat and maize, and vineyards, orchards, and vegetable gardens surround the villages and towns. Some of the finest grain-producing areas in Europe are in the Nagy-Alföld, particularly in Bachka in the south (now a part of Yugoslavia) and in the region along the Tisza River.

The Carpathian Basin displays a considerable diversity of relief. Nearly every type of region, from elevated highlands down to typical lowlands, is to be found here. Besides the Great Hungarian Alföld two smaller basins have been formed within the belt of the Carpathians; the Transylvanian Basin and the Little Alföld. The Great Alföld and the Little Alföld are typical plains. By their flatness and appropriateness for settlement these plains have become the anthropogeographical centers of the basins. The bordering highlands are not rich enough in mineral wealth to attract the people to the border areas of the basins. The variety of natural conditions afforded by the basins along the Danube results in a diversity of agriculture and in a lively inner trade. These geographically isolated compartments have become a harmonious agricultural entity consisting of homogeneous and complementary portions.

Soils.—The Carpathian Basin contains alluvial deposits to a depth of some hundred meters. The soils are diversified, especially in the plains and hilly regions. There are brown and chestnut-colored forest soils, and in the damp, marshy areas black forest soils. In the drier basins as well as in the lowlands of the Great Hungarian Plain, in the interior of Transylvania, and in smaller spots in the Little Hungarian Alföld, steppe soils have been formed which may be classified with the degraded chernozem soil of the steppe of Eastern Europe. These soils are favorable to all kinds of cereals. However, in a considerable part of the Great Alföld, particularly the region between the Danube and Tisza rivers, there are patches of unproductive, or infertile alkaline soils, the *szikes*. Here in the Great Alföld, barren sandy soil (formerly blown sand) is also to be found. It is planted chiefly with fruit and acacia trees, but is also used as potato fields, rye fields, and vineyards. Large spots of very fine, sandy loess soil, generally quite productive, are to be found in the Great Hungarian Alföld and Transdanubia. Alluvial soils (silt, meadow-clay) in larger spots occur on the peripheries of the Great Hungarian Alföld, in the Little Hungarian Alföld, and along the Drava River.

As regards fertility, there are great differences within individual soil types. In the Great Alföld, for example, the fertility of the loess steppe soils in the areas of Bachka and Bánság lying to the south of the Maros River exceeds by far that of the same loess soils in the same belt but lying north of the Maros. These differences are due to diversity in relief, different levels of subsoil water, and thickness of

the topsoil, as well as to the diversified structure of the subsoil. The forest soil of the northern areas is in general less fertile than that of the south and of the Great Alföld. It offers, however, more possibilities with careful cultivation and manuring. Because of the cooler summers in the north, droughts there are less damaging, even in those basins where precipitation averages only about 450–500 millimeters, than in the south or east.

It must be mentioned that a large-scale project in detailed topography, associated with the name of Dr. Lajos Kreybig, was begun in Hungary in the late 1930's in connection with the scheme of irrigation of the Great Hungarian Alföld. No detailed topographical work of its kind has been undertaken in any other place in Central Europe. On the basis of this work the irrigation system is being further developed by the present regime.

River system.—The Carpathian Basin contains a separate and closed river system differing distinctly from others in Europe. The axis of this system is the Danube River, the middle drainage area of which constitutes a hydrographic island in the center of the continent. The valley of the Danube broadens and merges on the north and east with the vast plains of the Tisza to form the Great Hungarian Alföld toward which numerous tributory rivers radiate. The river system of Hungary is naturally dominated by the Danube and by its principal tributary, the Tisza. The Danube has a normal flow of some 5 miles per hour and varies in width from 150 to 300 meters. The river Tisza rises in the Carpathians of Kárpátalja, now in the Soviet Union, and flows through the Great Alföld to join the Danube at its southern extremity in the great plains. These two main rivers and their tributaries drain the agricultural land of Hungary, and sometimes endanger it with their floods. They are the basis for all irrigation systems, existing and projected. From the point of view of river regulation and irrigation the Tisza is the more important.

Climate.—The Carpathian Basin, lying in the center of Europe, is the meeting place of the large European climate zones. This fact decidedly affects the economic, and especially the agricultural, life of this area. Three general types of climate may be distinguished in Europe: the oceanic or Atlantic in the west; the Mediterranean in the south; and in the east the continental with two subdivisions, viz., the southern dry steppe climate, and the northern cool, humid forest or boreal climate. The effects of these principal European climates reach the Carpathian Basin, and their mingling gives it a variegated

climate of a capricious character. This fact causes continuous difficulties for agriculture, not only in the selection of products, but in the technological methods of agriculture, in the possibilities for increasing the yields, as well as in utilization of research achieved in some other countries.

Temperature variations, both annual and diurnal, are considerable, particularly in the Great Alföld where the soil warms quickly in the sun, and cools equally quickly after sundown. The range of temperature increases from west to east. The following tabulation gives annual temperatures (in degrees centigrade) in three Hungarian cities (*2, 4*):

	Szombathely (west)			Budapest (center)			Szeged (southeast)		
Year	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.
1936–40 av. ..	9.6	34.4	—22.4	11.0	37.0	—17.3	11.3	38.2	—24.9
1941	8.2	30.5	—18.9	10.1	33.4	—14.5	10.4	34.2	—13.8
1942	8.8	32.8	—24.0	10.2	34.4	—21.7	10.4	36.3	—29.1
1943	10.2	35.0	—18.0	11.6	39.0	—16.1	12.0	38.2	—17.0
1947	10.2	34.5	—21.3	11.7	37.3	—18.6	12.1	37.5	—21.8

The average difference between maximum and minimum temperatures in any one year is 50° to 60° C.

The greater part of Hungary's rainfall occurs in the spring or early summer and in late autumn. The average annual rainfall varies between about 500 to 750 millimeters, according to the part of the country. Typical data for annual average rainfall are as follows (in millimeters):

Sopron (west)	770
Budapest (center)	640
Szeged (southeast)	560
Kolozsvár—Cluj (N. Transylvania)	710

An important factor in agricultural potential is the amount of sunshine, or the number of daylight hours in which the sun is unobscured by clouds. The southern part of Trianon Hungary receives about half of the possible amount of sunshine (2,072 to 2,262 hours per year), the northern and western regions somewhat less (1,874 and 1,984 hours). There is more sunshine in the Great Alföld than in the southern ranges of the Carpathians. July and August are the sunniest months.

Vegetation.—The greater part of Trianon Hungary consists of the grassy steppes of the plains—a typical dry-farming region now

largely devoted in a more and more improved rotation to the production of winter wheat, oats, barley, rye, peas, potatoes, and tobacco; in addition, grapes and other fruits are grown. On the forage land for livestock alfalfa predominates, supplemented by some semiarid grazing and pasture land of low carrying capacity. In the more humid western counties the principal forage crops are corn silage and clover.

The irrigation of the Great Alföld is a principal and urgent problem of long standing, the realization of which would change considerably the face of the plain-land from the point of view of vegetation and of the methods of cultivation. Between the two world wars important and basic work was done in this field, in spite of the fact that the mountainous regions lying to the north, northeast, and east, which contain the sources of the draining river system and the natural locations for barrages, dams, and all kinds of river regulation works, were no longer under Hungary's control.

The Középhegység (Central Mountains) and some of the hilly country south of Lake Balaton are wooded with beech and oak, and there are in these regions sizable forests of acacia.

In the reannexed territories (1938–41) to the north, beech and oak are found on the mountain slopes, but it is on the heights of Northern Transylvania that the larger timber resources are found. The slopes of the Carpathians are covered by extensive forests of oak, beech, and pine, and on the mountains nearer to the Trianon frontier there are beech and oak.

Hungary has several important wine districts, the two principal ones being those on volcanic formations in the northeastern part of the country and on the slopes of the similarly volcanic formations of the Középhegység, mainly on the northeastern side of Balaton Lake. The best Hungarian wines are produced on the slopes of the Tokaj Hegyalja Mountains. Viticulture is also carried out on the sandy parts of the Great Alföld.

POPULATION

Prior to the first Turkish invasion of the country early in the sixteenth century, Hungary proper had a population of 4.5 to 5 million out of a total estimated European population of but 80 million. By the beginning of the eighteenth century, Europe as a whole had almost doubled in population, yet Hungary numbered only some 3.5 million people, of whom about 2 million were Magyars.

The devastations during two centuries of Turkish invasions and partial domination (1526–1699); the struggle for independence during the Habsburg domination (1699–1867); and, finally, the policy of the Habsburgs during the time of the united Empire, directed against any economic growth or political strengthening of the Hungarians—all retarded the proper development of Hungarian economic life, including agricultural progress and expansion up to the end of the nineteenth century.

Migrations have played an important role in determining the size and structure of Hungary's population and the position of the Magyars in the Austro-Hungarian Empire. After the expulsion of the Turks at the end of the seventeenth century, the Habsburg government fostered extensive colonization within Hungarian territory by people of other nationalities. Immigrants came from all directions—Germans, a few French, Slavs, Rumanians, and Jews from Galicia. Most numerous and favored of these were the Catholic Germans. They received the best agricultural lands, buildings, and livestock at nominal prices and on easy terms. The Magyars were never favored so lavishly; in certain respects even their legal status was inferior to that of the newcomers. These facts explain the differences to be observed in the agricultural development of the Hungarian- and German-inhabited portions of the country.

On the other hand, a number of factors ultimately combined to lead to a movement of population from Hungary. The character of land tenure, based mainly on very large estates, and the consequent land shortage in the face of an increasing peasant population, produced a surplus of manpower which the poorly developed industrial sector was not able to absorb. Hungarian agriculture, furthermore, received a serious blow from the entry into the world wheat market of the United States, Canada, and Argentina. At the same time the prosperity that attended the phenomenal growth of the American economy was proving an irresistible attraction to the restless, hard-pressed peasants of all Central, Eastern, and Southern Europe.

Emigration from Hungary began in a small way about 1870. In 1882 emigrants to the United States numbered 16,000, and by 1907 the annual outflow had reached 200,000. Many of these emigrants left Hungary for the sole purpose of acquiring the capital to purchase enough land in their homeland to provide a livelihood. Some of them achieved that aim and returned during the period 1900 to 1930. The following tabulation contains statistics of emigration and of re-

immigration, relative to Great Hungary, Croatia-Slavonia excluded (*2, 3*):

Year	Number of emigrants	Emigrants per thousand inhabitants	Number of reimmigrants
1899	32,998	2.0	4,739
1900	34,712	2.1	6,169
1905	138,719	7.9	14,850
1910	80,220	4.4	21,403
1913	82,722	4.4	18,148
1899–1913	1,195,236	4.5	290,145

The above data are based on registrations made at seaports and relate to the size of emigrations to the United States and Canada only; the total emigration from Hungary was some 30 percent greater than here indicated. During the period 1880 to 1913 some 2 million citizens left Hungary for abroad, as emigrants. Nothing was done to stop this flow of emigration, and the only voice of protest against it was raised by the Hungarian National Association of Manufacturers (GYOSZ) which feared a shortage of manpower. The great landowners and the dynasty even gave assistance to this trend by influencing the government to subsidize the foreign shipping companies for transportation of emigrants (under the rules of Act No. IV, ex 1903). They wanted to get rid of the landless and penniless elements who provided fertile soil for socialistic propaganda.

The population of Trianon Hungary (as established under the rules of the Peace Treaty of Trianon, in 1920) was as follows (*4*, p. 40):

Year	Population	Source
1920	7,990,202	Census
1930	8,688,319	Census
1941	9,356,607	Calculated, December 31
1942	9,406,950	Calculated, December 31
1943	9,453,087	Provisional data
1946	9,305,000	Calculated, including absentees, prisoners of war, etc.
1947	9,337,000	Calculated, including absentees, prisoners of war, etc.

The population in the territory of Great Hungary, Trianon Hungary, and in the increased territory including reannexations ac-

quired during the years 1938–41 was as follows (*4*, pp. 28, 40):

Year	Territory (*km.* 2)	Population present in the area	Density of population (*per km.* 2)
Great Hungary (incl. Croatia-Slavonia)			
1900	325,411	19,254,559	59.2
1910	325,411	20,886,487	64.2
Trianon Hungary			
1920	93,073	7,990,202[a]	85.8
1930	93,073	8,688,319[a]	93.3
1941	93,073	9,319,992	100.1
1943	93,073	9,453,087	101.5
1946	93,011	9,305,000	100.0
Enlarged Hungary			
1938	105,000	10,382,014	98.9
1939	117,061	11,076,036	94.6
1940	160,165	13,653,296	85.2
1941	171,640	14,683,323	85.5

[a] Census data as of January 1.

The above statistics relative to the population of the actual Hungarian territory in the various years and periods provide the basic element for understanding the development of the Hungarian population, economic life, productive population, and the number of domestic consumers to be taken into consideration in the review of the Hungarian agriculture and food situation.

The distribution of the population in the inhabited localities of Trianon Hungary according to their size in 1941 is shown in Table 1.

TABLE 1.—POPULATION OF TRIANON HUNGARY BY SIZE OF COMMUNITY, 1941*

Number of inhabitants	Communities		Population		Average population
	(*number*)	(*percent*)	(*1,000 persons*)	(*percent*)	
Up to 1,000.....	1,536	46.74	889	9.54	579
1,001–5,000	1,473	44.81	3,102	33.29	2,105
5,001–10,000	151	4.59	1,020	10.96	6,758
10,001–20,000 ...	78	2.37	1,023	10.98	13,119
20,001–50,000 ...	36	1.10	1,136	12.20	31,560
50,001–100,000 ..	9	.27	609	6.53	67,647
100,001–1,000,000.	3	.09	372	3.99	124,039
Over 1,000,000 ...	1	.03	1,165	12.51	1,164,963
Total	3,287	100.00	9,317	100.00	2,833

* Data from Hungary, Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Zsebkönyv, 1948* [*Hungarian Statistical Pocketbook . . .*] (1948), p. 41.

TABLE 2.—POPULATION OF TRIANON HUNGARY BY PRINCIPAL GROUPS IN 1930, 1941, and 1946*

Classification	1930		1941		1946	
	Total population	Gainfully occupied	Total population	Gainfully occupied	Total population	Gainfully occupied
	(*Thousands*)					
Total:	8,688	3,999	9,320	4,503	9,305	4,367
Agriculture	4,499	2,031	4,539	2,155	4,600	2,207
Mining and smelting	115	35	166	55	188	54
Industry	1,883	887	2,200	1,057	1,462	871
Commerce, finance, and insurance	469	226	517	261	596	305
Communications ...	339	113	375	140	340	144
Public service and liberal professions .	435	196	473	230	413	224
Day laborers and domestic servants ...	320	238	254	201	300	252
Pensioners, *rentiers*, and house-property owners	361	170	386	199	270	310
Miscellaneous, including the defense forces	267	103	410	205	1,136	
	(*Percentage*)					
Total:	100.0	100.0	100.0	100.0	100.0	100.0
Agriculture	51.8	50.8	48.7	47.8	49.5	50.5
Mining and smelting	1.3	0.9	1.8	1.2	2.0	1.2
Industry	21.7	22.2	23.6	23.5	15.7	19.9
Commerce, finance, and insurance	5.4	5.6	5.5	5.8	6.4	7.0
Communications ...	3.9	2.8	4.0	3.2	3.6	3.3
Public service and liberal professions.	5.0	4.9	5.1	5.1	4.4	5.2
Day laborers and domestic servants ...	3.7	5.9	2.7	4.5	3.2	5.8
Pensioners, *rentiers*, and house-property owners	4.2	4.3	4.2	4.4	2.9	7.1
Miscellaneous, including the defense forces	3.0	2.6	4.4	4.5	12.3	

* Data from Hungary, Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Évkönyv, 1938* (1939), p. 16, and *ibid., 1941* (1943); *Magyar Statisztikai Zsebkönyv, 1947* (1947), p. 60; Natl. Bank of Hungary, *Hungary in Statistical Tables* (Budapest, 1947), p. 3.

At the end of December 1947—on the Trianon territory of Hungary, not including the three communities detached to Czechoslovakia—the number of communities increased to 3,300. This change was due to the land reform in consequence of which some new villages were formed and obtained legal standing.

Table 2 shows the population of Trianon Hungary in 1930, 1941, and 1946, grouped according to dependence on the various occupation classifications. No statistical data were available to the author relative to the reannexed territories for the years 1938 to 1945. Those territories reannexed to Hungary in 1938–41 are all predominantly agricultural. Apart from the development of certain mineral deposits in the northern areas and the processing of the ores extracted, there was in these regions but little industrial development, and though Hungary took over a population of 5,355,000 in the reannexed territories, these included few large towns. Consequently, the proportion of the agricultural population in total was greater in Enlarged Hungary than within the Trianon boundaries—57.5 percent as against about 49 percent.

After World War II Hungary was reduced to the Trianon boundaries, with the exception of a few square kilometers and, of course, the population of the same Trianon territory is comparable to the prewar situation. According to the quick census taken by the local authorities and published by the Hungarian Central Statistical Office, the population of Trianon Hungary on June 30, 1945 amounted to 8,656,178, or 663,814 less than on January 31, 1941, which constitutes a decrease of 7.1 percent. The total loss of population recorded due to war activities is given as 953,842 or 10.2 percent of the population by January 31, 1941. This loss included war casualties, people driven abroad by the different armies operating on the territory of Hungary, and refugees who fled westward to escape the Communist army.

CITATIONS

1 Paul Teleki, *Evolution of Hungary and Its Place in European History* (New York, 1923).

2 Hungary, Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Évkönyv* [*Hungarian Statistical Yearbook*], various years.

3 Kerék Mihály, *A magyar föld* [*The Hungarian Land*] (Budapest, 1941).

4 Hungary, Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Zsebkönyv, 1948* [*Hungarian Statistical Pocketbook . . .*] (1948).

CHAPTER 1

BACKGROUND OF AGRICULTURE

SOCIAL CONDITIONS

Hungary in 1848 was still overwhelmingly an agrarian state in which the burning social problem was that of the peasantry. The reforms of 1848, which no subsequent legislation attempted to alter, liberated the landed peasants and made them the owners of their land in freehold without requiring compensation. Their position, however, deteriorated with the rapid growth of population which necessitated the subdivision of holdings, and a surplus rural population came into being that could not be absorbed by the slow process of industrialization. The Austrian oppression of Hungary, subsequent to the tragic end of the War of Independence in 1848 and 1849, brought about not only a political but an economic and social crisis as well. During its 30 years of leadership, from 1875 to 1905, the Liberal party ensured a political balance based on the Compromise of 1867 between Hungary and the Hapsburg dynasty. On the other hand, however, it did not devote enough energy to problems of social development of the country. The peasants, though they came into possession of their dwellings and lands through the abolition of privileges, could not take full advantage of their new circumstances because they were left alone without any guidance. The poorer section of the peasantry, with little or no arable land, found employment until the end of the nineteenth century in large-scale government work projects, such as railroad and canal construction. The completion and establishment of the state railways, the control of rivers, and the building of canals, were finally carried out, making new acreage available for farming—a conception of Count István Széchenyi in the first half of the nineteenth century. (Irrigation, which belonged to his conception and would have been of enormous importance to the arid Central Plains, did not materialize at that time.) When, at the end of the nineteenth century, these aforesaid large public works were completed, marginal agricultural labor lost its outstanding source of income. Among other effects, this gave rise to the so-called "agrarian socialism."

The better-off peasants, farming from 60 to 100 acres, were emi-

nently adapted to become an active factor in political and social development. But since these were the most enthusiastic supporters of Kossuth and his independence movement, the government was against them. This stratum could have been strengthened from the ranks of the poor peasantry as the latter acquired smaller or larger tracts of land, but the system of large estates checkmated all such efforts. The majority party held the partly justifiable opinion that, under existing transportation and market conditions, the large estates had a better chance to produce and to sell, and more capital to invest. Consequently, it tried to preserve the large estates (two-thirds of the entailed property dates back to that time) and resisted every move that would have changed prevailing conditions. The reformers championed the leasing of small tracts to individual farmers against the renting of whole blocks of large estates to entrepreneurs. But the expropriation or division of landed properties was not suggested at that time because public opinion was made to believe that all official intervention would be injurious.

Emigration, which began in the 1890's on a large scale, gave some relief, but in general the level of living of most of the rural classes went down substantially. They were unable to secure relief through political action since the franchise, even after 1867, remained restricted; voting was open, and the power of the authorities was ruthlessly exercised against them. The big landowners still dominated economic policy in Hungary, sharing the power in the Austro-Hungarian Monarchy with the Austrian industrialists, and they used their political power constantly to depress wages and to worsen conditions. The social, political, and economic conditions of this great class of Hungarian society—the rural proletariat, Magyars as well as non-Magyars—were very bad.

The situation of the small industrial proletariat, particularly skilled workers, was substantially better, but they too lived under conditions that mocked complacency.

At the other end of the scale the great aristocrats, reinforced as well by some capitalists, still maintained a splendid existence. But below them in the social scale was another serious gap, hardly perceived at the time. The magnates, who were loyal to the Hapsburgs, were on the whole compensated adequately and punctually by the authorities of the absolutist period for the liberation of the peasants. Yet the smaller "gentry," who were the backbone of the national revolution of 1848–49, were made to wait for their money and many of them spent it unwisely when they received it. In addition, they

proved generally unequal to the new situation of farming with hired labor, and were largely ruined as a class. Their estates, which they were forced to sell, went to swell still more those of the magnates. The ruined gentry streamed into the towns, where they found posts in the new administrative offices. By effecting this transformation, the Liberal governments of the late nineteenth century saved the members of a historic class from starvation, but did not create what Hungary needed—a national middle class with a specifically middle-class outlook.

After World War I Hungary possessed an economic structure singularly unsuited to the requirements of the country within the new and drastically restricted frontiers. Both agriculture and the principal industry of the country (the food-processing industry, which provided at that time 40 percent of the gross value of the total industrial production) had been developed largely to supply the markets of the Austro-Hungarian Empire, with which three-quarters of all trade formerly took place. Production, therefore, was considerably in excess of the needs of Trianon Hungary.

On the other hand, Hungary was dependent upon imports, not only for most manufactured and semimanufactured goods, but also for some of the raw materials necessary for her few industries other than food processing. Hungary was, therefore, particularly dependent upon having favorable markets abroad, and this fact, together with the general maladjustment of the internal economic structure, was responsible for the very great severity of the postwar depression in Hungary; agricultural unemployment, in particular, became one of the country's most serious problems.

The early 1920's were a period of confusion and misery. There was a heavy currency inflation, the reparations question was unsettled, large numbers of refugees who came from the successor states (Czechoslovakia, Rumania, and Yugoslavia) had to be housed and placed, industry had to be reorganized, and foreign trade to find new markets. The inflation, however, was stopped with the help of a League of Nations loan; relatively normal conditions were finally restored, and Hungary even enjoyed a measure of prosperity until the great agricultural crisis descended upon it in 1931.

There followed a series of social changes, largely determined by world economic factors. Industrialization progressed, and with it the industrial working class, though still small, grew steadily in numbers and potential strength. There was a further deterioration of the position of the agricultural proletariat, cut off by the new

American legislation from its old outlet of emigration and unable to place more than a part of its surplus members in industry. In order to keep them from sheer starvation the government had to exercise its influence with the landowners not to mechanize agriculture, and not to use any reaping machinery they might own, but to continue the old method of employing large numbers of laborers, paid largely in kind.

Rural destitution resulted less from rural overpopulation than from the unequal distribution of land. Hungary was not so seriously overcrowded in relation to her farmland as parts of Rumania or Yugoslavia, and an increase in the number of peasant holdings could have materially improved living conditions for the rural poor, particularly if accompanied by the expansion of animal husbandry.

LAND TENURE

During the period from 1890 to 1914 some 2,000,000 cadastral holds were distributed among smaller farmers or landless people by parceling estates, although there was no legal obligation to do this. According to the registration of landed estates[1] made in 1913 in Hungary (Croatia not included), the situation was as follows:

Size of holdings (*cadastral holds*)	Number of holdings	Area of holdings (*million cadastral holds*)
100–200	10,849	1.53
200–300	4,659	1.14
300–500	4,449	1.72
500–1,000	3,822	2.66
1,000–2,000	2,084	2.91
2,000–5,000	1,386	4.26
5,000–10,000	425	2.91
10,000–20,000	196	2.70
20,000–more	128	6.75

Of the country's total territory of 49 million cadastral holds or 282,870 square kilometers (*1*, p. 7), more than one-half—54 percent or 26,580,000 cadastral holds—was comprised in the category of landed estates with more than a 100-cadastral hold area (one cadastral hold or yoke is equal to 1.422 acres or 0.5755 hectares).

It is a commonplace that Hungary has been a country of vast estates and a landless agricultural proletariat. This is, of course, an

[1] The terms "landed estates" and "holdings" are used here in the sense of property units, not farms.

oversimplification, for between the "feudal" landowner and the landless man there were many gradations. It is true, however, that one of the unsolved problems of Hungary's agriculture, for a very long time, has been that of agrarian reform. Apart from the liberation of the *jobbágy* (serfs)[2] in 1848, there was no indication until the turn of the century of an established government policy regarding the problems of the small farmers and peasants, and the "land hunger" of the agricultural laborers. In 1903 and again in 1909 Ignác Darányi, then Minister of Agriculture, worked out and introduced land-reform bills in Parliament which have been considered the foundation of all later measures in this field. However, they were not passed by the legislative bodies.

After World War I the first step in the economic reorganization of Hungary was the land reform of 1920. As a result of this agrarian reform, 948,682 cadastral holds out of a country-wide (Trianon area) total of 16 million were expropriated from great landowners; from this, 259,733 sites for family dwellings with a total area of 58,598 holds were distributed, 699,334 holds were given for the establishment of small holdings, and 190,750 holds were set apart for public purposes. Later, the total area distributed under this land-reform law was raised to 1,120,241 holds. Some 90 percent of the area distributed under this land reform was arable land. The average distributed area was 1.5 cadastral holds per person. No healthy distribution was attained as a result of the execution of this land reform, owing to the facts that the extent of expropriation from the large estates was insufficient, the method of distribution was inadequate, and no settlement policy was planned or pursued in connection with the reform. The two extremities, namely the large estates and the dwarf holdings, continued to exist. The great number of the beneficiaries shows the reform to have been a far-reaching action, but with respect to the very limited area requisitioned it cannot be regarded as a satisfactory solution. This land reform did not help the beneficiaries with equipment, animals, necessary capital or loans, nor even with elementary agricultural education. As a result of this situation there was a sensible decrease of agricultural production. Moreover, the holdings were very small, too small to support a family.

Another, but less extensive, reform was carried through under the

[2] The term "serf" does not correspond fully with the meaning and status of the *jobbágy* (a special Hungarian legal classification), who enjoyed more liberties than the serfs in Western Europe.

supplementary laws of 1936, but the broad position of the figures as shown in the statistics taken in the year 1935 has not been greatly altered (see Table 3).

TABLE 3.—DISTRIBUTION OF LAND BY SIZE OF HOLDINGS IN TRIANON HUNGARY, 1935*

Size in holds[a]	Number of holdings	Percent of holdings	Total area (*1,000 holds*)	Total area (*1,000 hectares*)	Percent of area
Less than 1	628,431	38.5	236	136	1.5
1–5	556,352	34.1	1,395	803	8.7
5–10	204,471	12.5	1,477	850	9.2
10–20	144,186	8.8	2,026	1,166	12.6
20–50	73,663	4.5	2,172	1,250	13.5
50–100	15,240	.9	1,036	596	6.4
100–200	5,792	.4	805	463	5.0
200–500	3,840	.2	1,181	679	7.3
500–1,000	1,362	.1	944	543	5.9
1,000–2,000	581	.0	798	460	5.0
2,000–3,000	187	.0	452	260	2.8
3,000–5,000	117	.0	451	260	2.8
5,000–10,000	101	.0	680	391	4.2
10,000–20,000	48	.0	691	398	4.3
20,000–50,000	25	.0	855	492	5.3
50,000–100,000	10	.0	671	386	4.2
Over 100,000	1	.0	209	120	1.3
Total	1,634,407	100.0	16,081[b]	9,254	100.0

* Data from Hungary, Magyar Központi Statisztikai Hivatal, *Magyarország földbirtokviszonyai 1935-ben. II. Birtok-nagyságcsoportok szerint* [*Conditions of Land Tenure in Hungary: II. According to Area Groups by Size, in 1935* (New Ser., Vol. 102 (1938)]. See also Hungary, Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Zsebkönyv, 1948* [*Hungarian Statistical Pocketbook* . . .] (1948), p. 103.

[a] One cadastral hold equals .5755 hectare, or 1.422 acres.

[b] Sum of unrounded figures.

While these figures reveal very strikingly the high proportion of the land that was held in large and mammoth estates (15 percent of the total area owned by 84 individuals), and the great number of small and dwarf holdings (14.4 percent of the total area owned by 1,389,254 "landholders"), it must be remarked that they do not of themselves suffice to present a complete picture of the situation. They show, on the one hand, holdings belonging to persons not engaged wholly in agriculture; on the other hand, they take no account of the portion of the agricultural population that is altogether landless. Furthermore, they show neither leaseholds nor

cases where two members of a family own separate holdings. For a true picture of the agrarian situation, they therefore need to be supplemented by statistics on occupations. These show that in the same year, 1935, out of the total agricultural population of 4.5 million persons (dependents included), about 1.5 million were owners or tenants of holdings larger than 5 holds (usually taken as the lower limit capable of affording a family any sort of livelihood). There were, on the other hand (dependents again included):

Category	Persons
Owners of holdings of 1–5 holds	1,093,030
Tenants of holdings of 1–5 holds	552,700
Agricultural laborers[a] with holdings of under 1 hold	271,767
Landless agricultural laborers[a]	455,621
"Farm hands"[a]	599,622
Total	2,972,740

[a] "Agricultural laborers" are occasionally-employed workers; "farm hands" are employed under the respective law (Act XLV, ex 1907) at least for a one-year period and are obliged to do all kinds of work on the farm.

This group of the dwarf holders and the landless men—farm servants, regular, gang, or casual agricultural laborers—represented Hungary's largest social class and her most urgent problem.

Pressure of population on the land, and with it an active demand for distribution of land to landless, grew acute; it was only partly relieved by emigration, on the one hand, and barely touched, on the other, by the totally inadequate land reforms of 1920 and 1936. Beginning in 1940, military mobilization and the drift into war factories (a phenomenon caused by the wartime stimulation of industries and the possibility of exemption from military service, and that later took the form of "flight from the land") brought about a new situation. They not only absorbed the marginal producers and all farm-labor surplus but even prompted government measures which tied the laborers to the land and fixed a ceiling on industrial wages. But the other sides of the problem—the political impotence, the social degradation, the lack of care or proper education—remained, though the last years prior to the war and the wartime period undoubtedly brought a slight improvement.

In 1940 new measures supplemented the land-reform laws. Under the rules of a new land-reform act passed by the Parliament in 1940, it was intended to expropriate and parcel out some 870,000 cadastral holds belonging to the big estates in the course of 10 years, beginning with uncultivated fallow land and estates owned by

Jews subject to the provisions of the Jewish Law of 1939. The area to be transferred each year was only about 0.6 percent of the total area of all agricultural holdings. Because little progress was made in the execution of this program, a new law was enacted in 1942 to provide for the enforced sale of all Jewish landed estates outside urban areas. By the end of 1943 it was claimed that some 722,000 holds had been taken over in this way.

The reannexation of territories during the years 1938 to 1941 and the extension of land reforms to these territories made the situation somewhat more favorable for Enlarged Hungary.[3]

CITATION

1 Magyar Központi Statisztikai Hivatal, *Ungarisches Statistisches Jahrbuch*, Neue Folge, XXIII, 1915 (German edition of the *Hungarian Statistical Yearbook*, Budapest, 1921).

[3] On land reforms in Hungary see also chapter 3 of General Survey.

CHAPTER 2

AGRICULTURAL PRODUCTION

Until the outbreak of World War II, farming estates were worked in general on traditional lines, and little attempt was made to adapt production to market changes prior to the agricultural crisis of 1930. Cultivation of the existing large estates depended on a supply of casual labor for work at the peak periods of the year. Before the war there was no lack of cheap labor in Hungary; in fact, it was cheaper to use hand labor than machinery for harvesting, since a gang of casual laborers would harvest the crop for a one-tenth share, or even less.

The density of population, particularly of agricultural population, would justify more intensive farming, but political conditions and other factors have prevented such a development. The number of inhabitants of a typical agricultural county like Csongrád or Jász-Nagykun-Szolnok, for instance, prior to the war exceeded 220 per square mile, while in Kansas, where the rural population reached 62 percent, according to 1930 data, there were only 23 per square mile. The agricultural population of Trianon Hungary made up 52 percent of her inhabitants in 1930 and 49 percent in 1941 (Table 2, p. 153).

Mobilization for the army and the strong movement of agricultural labor into war industries created a shortage of labor that hampered farm operations. This obstacle, though serious, was largely overcome by more intensive work.

LAND UTILIZATION

Trianon Hungary, prior to the annexations of former territories which began in 1938, had a total area of 9,307,300 hectares. Of this, some 7.5–7.6 million hectares, or more than 80 percent, were devoted to agriculture (Table 4). Arable land (field crops including fallow) comprised almost three-fourths of the agricultural land, a percentage exceeded, among European countries, only in Denmark. Orchards and vineyards added another 4 percent to the proportion of arable land. The remaining agricultural land, some 21 percent, was in meadows and pastures (Table 5).

TABLE 4.—LAND UTILIZATION IN TRIANON HUNGARY AND REANNEXED TERRITORIES, AS OF 1938–41

Territory	Total area	Agricultural land		Forest	Other
		Total	Arable		
	(Thousand hectares)				
Trianon territory (1938)[a]	9,307	7,560	5,622	1,107	640
Felvidék (1938)[b]	1,193	938	709	190	65
Kárpátalja (1939)[b]	1,206	527	188	649	30
Erdély (1940)[b]	4,310	2,582	1,336	1,574	154
Délvidék (1941)[b]	1,148	970	788	87	91
Enlarged Hungary (1941)	17,164	12,610[c]	8,665[c]	3,581[d]	973[d]
	(Percent of total area)				
Trianon territory (1938)[e]	100	81.2	60.4	11.9	6.9
Felvidék (1938)[f]	100	78.6	59.4	15.9	5.5
Kárpátalja (1939)[f]	100	43.7	15.6	53.8	2.5
Erdély (1940)[f]	100	59.9	31.0	36.5	3.6
Délvidék (1941)[f]	100	84.5	68.7	7.6	7.9
Enlarged Hungary (1941)[e]	100	73.5	50.5	20.8	5.7

[a] Data from Hungary, Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Zsebkönyv, 1948* [*Hungarian Statistical Pocketbook . . .*] (1948), pp. 108–09.

[b] Total area from Lajos Thirring, "Az 1941. évi népszámlálás eldözetes eredményei" ["The Preliminary Results of the Census of 1941"], *Magyar Statisztikai Szemle* [Review] (Hungary, Magyar Központi Statisztikai Hivatal), 1941, Nos. 3–4, p. 155; other areas computed from percentages below (see note *f*) applied to respective total.

[c] See Table 5, note *a*.

[d] Nonagricultural land (residual) divided into "forest" and "other" according to proportions of the sums of the individual territories.

[e] Computed from absolute figures above.

[f] Data from *Magyar Statiszitikai Szemle*, 1940, No. 7, and 1941, No. 11. This source gives the percentage distribution of the total areas of Trianon Hungary (1938), the individual annexed territories, and Enlarged Hungary, into the categories shown here and in Table 5. For Trianon Hungary these percentages checked with those computed from the absolute figures given in the source in note *a* above. The date of the percentages given for Enlarged Hungary was indefinite, and since a distribution as near that of 1941 as possible was desired the percentages were used only where data for that year were not available. The absolute figures for the individual annexed territories, here and in Table 5, were all derived from the percentages given in this source.

The territorial annexations of 1938–41 changed these proportions somewhat for Enlarged Hungary. The *Felvidék* (Upper Region), embracing about 1.2 million hectares, is similar to Trianon Hungary in its percentage of agricultural land and in the distribution among the categories mentioned above. The best land is in the western part, which includes the northern portion of the Little Alföld. The eastern part is hilly and the soil is generally poor. *Kárpátalja*, or Subcarpathian Ruthenia, is a typically mountainous, forested region of about the same total area as the Felvidék. Less

TABLE 5.—DISTRIBUTION OF AGRICULTURAL LAND IN TRIANON HUNGARY AND REANNEXED TERRITORIES AS OF 1938–41*

Territory	Agricultural land	Arable land	Orchards	Vineyards	Meadows	Pastures
			(*Thousand hectares*)			
Trianon territory (1938)	7,560	5,622	119	208	646	965
Felvidék (1938) ..	938	709	20	10	100	99
Kárpátalja (1939)	527	188	12	1	169	157
Erdély (1940)	2,582	1,336	69	17	621	539
Délvidék (1941) ..	970	788	10	18	57	95
Enlarged Hungary (1941)	12,610[a]	8,665	223[b]	258[b]	1,610[c]	1,854[b]
			(*Percent of agricultural land*)			
Trianon territory..	100	74.4	1.6	2.7	8.5	12.8
Felvidék	100	75.6	2.1	1.1	10.7	10.6
Kárpátalja	100	35.7	2.3	.2	32.1	29.8
Erdély	100	51.7	2.7	.7	24.0	20.9
Délvidék	100	81.3	1.0	1.9	5.9	9.8
Enlarged Hungary	100	68.7	1.8	2.0	12.8	14.7

* Data from sources given, or derived in the manner indicated, in Table 4, except as otherwise noted. Percentages computed.

[a] Sum of individual categories.

[b] Based on percentages described in note *f*, Table 4, applied to total area of 17,164 thousand hectares.

[c] From source given in note *a*, Table 4.

than half its surface could be classed as agricultural land, and of this more than 60 percent was meadow and pasture. Arable agriculture there is backward, and the level of living of its predominantly rural population is extremely low. The region was valuable to Hungary chiefly for its timber and in providing potential locations for irrigation reservoirs.

Erdély, or Northern Transylvania, was the largest of the reannexed territories, with a total area of 4.3 million hectares. Of its 2.6 million hectares of agricultural land 55 percent was in field crops, orchards, and vineyards, the rest being meadows and rough mountain pastures largely devoted to sheep raising. The soil is generally poor, the density of farm population high, and methods of cultivation were below the average Hungarian level. Timber and minerals were Erdély's most valuable contribution to Hungary's economy.

For its size, the *Délvidék* (Southern Region) was agriculturally

the richest area reannexed by Hungary. All but about 15 percent of its total area of 1.15 million hectares was agricultural land, and over 80 percent of this was arable. Farming methods were relatively advanced, peasant farms of medium size predominated, and the level of living was high for this part of Europe. The Délvidék includes Bachka, an outstanding grain-producing region whose surplus would normally have been at least equal to Trianon Hungary's annual export of grain. Unfortunately Hungary had no opportunity to benefit from this surplus since it was reserved exclusively for Germany and Italy during the war.

By her reannexations Hungary thus acquired—in addition to valuable expanses of forest—substantial areas of meadows and pastures of varying quality, a sizable amount of poor to fair arable land, and considerably less good arable land. The preponderance of land devoted to crops (including orchards and vineyards) in Enlarged Hungary, though still marked, was a little less so than in Trianon Hungary—72.5 percent of all farmland as against 78.7.

CROP FARMING

Arable land.—The war brought little change in the general pattern of arable agriculture in Trianon Hungary. Arable land remained virtually unchanged at around 5.6 million hectares. Fallow was extensive in certain years, reaching a peak of 775,000 hectares (14 percent of the arable land) in 1945; this, combined with a heavy crop failure in that year, reduced the harvested area to 82 percent of the arable land as compared with an average of 96 percent in the decade prior to the war. Fallow and crop failures were reflected in the harvest of fall-sown areas, which were consistently below the prewar level; spring-sown areas harvested tended to show a slight increase during the war. Table 6 gives a generalized picture of the

TABLE 6.—DISTRIBUTION OF ARABLE LAND IN TRIANON HUNGARY AND ENLARGED HUNGARY, 1931–47*

Year of harvest	Total arable land	Fallow	Area sown	Crop failure	Area harvested		
					Total	Fall-sown	Spring-sown
			TRIANON HUNGARY (*Thousand hectares*)				
1931–35 av....	5,597	132	5,465	86	5,380	...	...
1936–40 av....	5,616	149	5,467	78	5,389	...	...
1941–44 av....	5,610	250	5,360	105	5,255	...	...

TABLE 6 (*Continued*)

Year of harvest	Total arable land	Fallow	Area sown	Crop failure	Area harvested		
					Total	Fall-sown	Spring-sown
			TRIANON HUNGARY				
			(*Thousand hectares*)				
1939.....	5,616	101	5,515	36	5,479	2,377	3,103
1940.....	5,620	264	5,356	240	5,116	2,015	3,101
1941.....	5,621	494	5,127	42	5,084	1,958	3,126
1942.....	5,623	360	5,263	70	5,193	2,047	3,146
1943.....	5,604	69	5,535	201	5,334	2,195	3,139
1944.....	5,590[a]	78[a]	5,512	...	...	...	...
1945.....	5,572	775	4,797	231	4,565	1,139	3,426
1946.....	5,552	339	5,213	355	4,858	1,606	3,252
1947.....	5,537	155	5,382	262	5,120	...	...
			(*Percent of arable land*)				
1931–35 av....	100	2.4	97.6	1.5	96.1	...	...
1936–40 av....	100	2.6	997.4	1.4	96.0	...	...
1941–44 av....	100	4.5	95.5	1.9	93.7	...	...
1939.....	100	1.8	98.2	.6	97.6	42.3	55.3
1940.....	100	4.7	95.3	4.3	91.0	35.8	55.2
1941.....	100	8.8	91.2	.8	90.4	34.8	55.6
1942.....	100	6.4	93.6	1.3	92.3	36.4	55.9
1943.....	100	1.2	98.8	3.6	95.2	39.2	56.0
1944.....	100	1.4	98.6	...	...	...	...
1945.....	100	13.9	86.1	4.2	81.9	20.4	61.5
1946.....	100	6.1	93.9	6.4	87.5	28.9	58.6
1947.....	100	2.8	97.2	4.7	92.5	...	...
			ENLARGED HUNGARY				
			(*Thousand hectares*)				
1939[b].....	6,335	116	6,219	47	6,172	2,711	3,461
1940[c].....	6,528	300	6,228	256	5,973	2,361	3,612
1941[d].....	8,665	749	7,916	59	7,857	2,960	4,897
1942.....	8,678	650	8,028	90	7,938	3,007	4,931
1943.....	8,609	242	8,367	273	8,094	3,244	4,850
			(*Percent of arable land*)				
1939.....	100	1.8	98.2	.8	97.4	42.8	54.6
1940.....	100	4.6	95.4	3.9	91.5	36.2	55.3
1941.....	100	8.6	91.4	.7	90.7	34.2	56.5
1942.....	100	7.5	92.5	1.0	91.5	34.7	56.8
1943.....	100	2.8	97.2	3.2	94.0	37.7	56.3

* Based on data in Hungary, Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Évkönyv, 1948*, and *Magyar Statisztikai Zsebkönyv, 1948*, except as noted.

[a] Data from Internat. Inst. Agr., *International Yearbook of Agricultural Statistics, 1941–42 to 1945–46* (Rome, 1947), III, 62, 64.

[b] Trianon Hungary and Felvidék.

[c] Trianon Hungary, Felvidék, and Kárpátalja.

[d] For 1941–43, Trianon Hungary, Felvidék, Kárpátalja, Erdély, and Délvidék.

situation in arable farming in Trianon and Enlarged Hungary before and during the war.

As in the other Danubian countries, cereals strongly predominate in arable farming, accounting for roughly three-fourths of the area sown in the decade preceding World War II. (In Table 7, which

TABLE 7.—SOWN AREA OF PRINCIPAL CROP GROUPS IN TRIANON HUNGARY, 1931–47*

Year of harvest	Small grains[a]	Pulses	Hoe crops[a]	Commercial crops	Fodder	Vegetables	Other crops	Fallow
				(*Thousand hectares*)				
1931–35 av..	2,989	36	1,653	74	661	28	25	132
1936–40 av..	2,903	47	1,692	67	688	35	34	149
1941–44 av..	2,713	98	1,584	158	719	42	45	250
1945.....	1,937	66	1,787	177	742	39	49	775
1946.....	2,370	36	1,769	235	693	45	64	339
1947.....	2,623	34	1,862	187	601	47	28	155
				(*Percent of arable land*)				
1931–35 av..	53.4	.6	29.5	1.3	11.8	.5	.5	2.4
1936–40 av..	51.7	.8	30.1	1.2	12.3	.6	.6	2.7
1941–44 av..	48.4	1.8	28.2	2.8	12.8	.7	.8	4.5
1945.....	34.7	1.2	32.1	3.2	13.3	.7	.9	13.9
1946.....	42.7	.6	31.9	4.2	12.5	.8	1.2	6.1
1947.....	47.4	.6	33.6	3.4	10.9	.8	.5	2.8

* Data from Hungary, Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Zsebkönyv, 1948* (1948), pp. 116–17.

[a] Maize treated as hoe crop in the source.

shows official data on crop groups as percent of arable land, maize is included among the hoe crops; it normally occupied over 20 percent of the sown area.) Crops sown for fodder ran a poor second to cereals, averaging about 12 percent, and hoe crops other than maize were third with about 10 percent. A little less than half of the remaining 3 percent was sown to commercial crops. (Data on acreage and production of individual crops in Trianon Hungary are given in Appendix Tables I–III, pp. 220–21.)

The war brought certain significant changes in this distribution. A comparison of the averages for 1936–40 and 1941–44 in Table 7 reveals declines in sowings to small grains and hoe crops (including maize) and increases in the other groups. Small grains took a sharp drop in 1945, whereas hoe crops (principally maize), fodder, and commercial crops reached levels well above prewar averages. It

should be noted that fallow was unusually large in that year, which suggests that the decline in small grains represents largely a failure to plant rather than a shift to other crops.

Wheat is Trianon Hungary's leading crop in terms of area. It is grown throughout the country, and in no district does it occupy much less than 20 percent of the arable land. Its greatest concentration is in the southern plain between the Tisza River and the Rumanian border, where nearly a third of the *total* area of some counties was devoted to wheat before the war. Hungary's wheat is predominantly fall-sown and is similar to the hard winter wheat of Kansas with which it compares favorably in qualtity. Yields per hectare in the interwar period were almost invariably higher than in the other Danubian countries, and tended to fluctuate somewhat less.

Wheat production went down in the three years following the excellent crop of 1939, owing to reduced acreages and somewhat depressed yields, but the crops of 1943 and 1944 were at about prewar level. Not until 1945 was wheat output disastrously low. Rye production followed much the same course, at about one-third the level of wheat.

It is doubtful that Hungary benefited, as far as wheat supply is concerned, from her territorial annexations. Only the Délvidék (chiefly Bachka) had a surplus and, as noted above, this was reserved for Germany and Italy. Acreage and production data for Enlarged Hungary are given in Appendix Tables IV and V, pages 222–23.

Maize was a close second to wheat in terms of area before the war and occasionally exceeded wheat in volume of production. It is used predominantly for feed in Hungary. Maize crops were good in 1940 and 1944; 1942 and 1943 crops were poor, the latter down almost 50 percent from prewar.

The production of potatoes, the only nongrain food crop that constitutes a sizable item either in farm output or in the diet of Hungary, remained more or less normal in the Trianon territory in the early years of the war. The crops of 1942 and 1943 were about 15 percent below the prewar average because of subnormal yields; an unusually high yield in 1944 gave a bumper crop, but production in the following year dropped to the lowest point of the war—some 25 percent below the prewar level. Potatoes were exported to Italy from the 1941 crop, and some small exports went to Greece. However, there was no surplus of potatoes in the country.

Sugar-beet production, after the excellent crop of 1940, fell off

in the course of the next three years to a level about 25 percent below prewar. The crop of 1944 was excellent, but a drastically curtailed acreage and a record low yield in 1945 combined to reduce output to less than 20 percent of the prewar average. There were some exports of sugar from the 1941 crop, but no surplus existed in 1942 when sugar rationing was started.

Hungary's territorial reannexations nearly doubled her prewar production of vegetable oils, although at prewar consumption levels there was still a small net import. Partly to make up for the decline in lard supplies, partly to provide some surplus for export in exchange for needed materials, Hungary tried to expand production, though with only limited success. The production of all vegetable oils in 1942 was sufficient to cover the country's needs in both edible and industrial oils, but not enough to provide any surplus for export. Cultivation of oil crops was made compulsory; also some inducements were introduced in the shape of attractive prices, special fertilizer allocations, extra allowances of vegetable oil, etc.

Pulse crops and areas changed during the war. The government fostered the production of such crops, though not with permanent success. Frosts and drought unfavorably affected the crops. The area sown to peas more than doubled between the years 1938 and 1943 for Trianon Hungary, and nearly doubled for Enlarged Hungary between 1941 and 1943; the production increased in proportion to the expansion of area. The area and production of beans increased by 30 percent for both territories. The production of lentils, an export product, decreased greatly. The area sown in Trianon Hungary dropped from 9,000 hectares in 1939 to only 3,000 by 1943, and production from 5,400 metric tons to 2,400 tons. The same phenomenon was to be observed for Enlarged Hungary, although the process was slower.

The area devoted to garden-type vegetables constituted a very small percentage of the total arable land in Trianon Hungary before the war. Onions, garlic, cabbage, and tomatoes were exported and thus had some economic importance. Table 7 shows a 20 percent increase in area between the 1936–40 and 1940–44 averages.

The area used for the cultivation of paprika for spice, an export commodity, remained constant for Trianon Hungary (7,000 hectares) and for Enlarged Hungary (9,000 hectares), but production in Trianon Hungary fell from 6,700 metric tons to 3,600 metric tons in the years 1939 to 1943, and that in Enlarged Hungary from 8,400 metric tons to 4,400 metric tons in the years 1941 to 1943.

The tobacco acreage of Hungary, which totaled about 13,000 hectares for the Trianon territory, increased during the war owing to her territorial expansion. Efforts were made both to increase production still further and to replace the rather coarse native tobacco with improved types. Some finer qualities, such as Virginia tobacco, were also cultivated. In the wartime period compulsory cultivation of tobacco was introduced in an effort to realize the planned area of 40,000 hectares. Under the German-Hungarian tobacco agreement, 7,000 tons of tobacco were to be delivered to Germany during 1943. Of Hungary's tobacco exports during the war, Germany and France took the largest proportion.

Viticulture.—The wine and grape industry of Trianon Hungary contributed 7.8 percent to the total volume of agricultural production in the five-year period prior to the war. Besides supplying domestic consumption, Hungarian viticulture contributed an important item to the country's export trade. For the years 1936 to 1938 the annual export of grapes averaged 129,810 quintals with a value of 3,111,800 pengö, and the export of wine averaged 345,576 quintals with a value of 6,912,000 pengö (*1*, pp. 229, 236–37). Thus viticulture's annual average export value amounted to over 10 million pengö. The territorial reannexations to Hungary increased the area of vineyards from 218,878 hectares in 1938 to 272,917 hectares in 1941, i.e., 21 percent (*2*, p. 94).

The area of vineyards and the production of wine in Trianon Hungary are given in Table 8.

Most of the vineyards in Hungary are interplanted with fruit trees. The following tabulation (*3*, p. 87) shows the number of

TABLE 8.—AREA OF VINEYARDS AND WINE PRODUCTION IN TRIANON HUNGARY, 1931–47*

Period or year	Area		Production	Yield	
	(*1,000 holds*)	(*1,000 hectares*)	(*1,000 hl.*)[a]	(*hl. per hold*)	(*hl. per hectare*)
1931–35 av.....	369	213	3,188	8.6	14.9
1936–40 av.....	379	218	3,476	9.2	16.0
1941–43 av.....	398	229	3,235	8.1	14.1
1945.....	415	239	3,335	8.0	13.9
1946.....	414	238	3,893	9.4	16.3
1947.....	409	236	2,439	6.0	10.4

* Data from Hungary, Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Zsebkönyv, 1948* (1948), p. 123.

[a] Hectoliters.

fruit trees planted in vineyards in Trianon Hungary (in thousands):

1939	9,051
1940	8,989
1941	8,827
1942	8,599
1943	8,162
1946	8,241

Fruit.—Fruit production, including wine and grapes, contributed 6.36 percent in 1933/34, and 5.60 percent in 1934/35, to the value of agricultural production (crop and animal production together). The proportion of fruit, excluding wine and grapes, was estimated at 2.65 and 2.19 percent respectively. The total value of fruit production was estimated for the national income at 48,500,000 pengö for 1933/34 and 46,000,000 pengö for 1934/35. The principal fruit crops are cherries, sour cherries, apricots, peaches, apples, pears, plums, walnuts, quinces, almonds, hazelnuts, and, of course, grapes and melons. There are no detailed statistics available for fruit production.

The Act No. XXI, ex 1939, opened a new period for fruit cultivation by prescribing fruit-growing methods, and regulating tree nurseries and planting of orchards, as well as by opening educational courses and granting facilities for the use of pesticides. The development of the best types of fruit trees was fostered under the rules of this law. Storage facilities and new marketing systems were also introduced. The year 1939 brought a record crop in fruits. The interwar period thus ended very promisingly. During the war the number of fruit trees declined very seriously, not only because of direct damage, but also through lack of proper care and the shortage of pesticides. It is estimated that the stock which developed rapidly until 1944 has fallen back to the number in 1935. The fruit crop declined from 1,800,000 quintals in 1938 to 1,000,000 in 1946.

Meadows and pastures.—Hungary's meadows and pastures vary greatly in quality, and the quantity and quality of hay produced vary accordingly. On the whole, the meadows of Trianon Hungary are rather poor, with an average yield of 26 quintals of hay per hectare before the war. This level was maintained, more or less, during the first half of the war, but yields dropped off sharply during the second half (Table 9).

The pasture lands were even less productive than the meadows. However, these areas, not usable for other cultivation under the present circumstances (irrigation may bring important changes),

TABLE 9.—AREA OF MEADOWS AND HAY PRODUCED IN TRIANON HUNGARY, 1941–46, AND ENLARGED HUNGARY, 1939–43*

Year	Area (*1,000 hectares*)	Hay production	
		Total (*1,000 quintals*)	Yield per hectare (*quintals*)
	TRIANON HUNGARY		
1941	642	17,955	28.0
1942	643	15,492	24.1
1943	647	10,541	16.3
1944	645	...	...
1945	639	9,561	15.0
1946	627	7,578	12.1
	ENLARGED HUNGARY		
1939	738	20,635	27.9
1940	913	23,807	26.1
1941	1,610	42,727	26.5
1942	1,618	32,770	20.3
1943	1,628	22,752	14.0

* Data from Hungary, Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Évkönyv, 1948* (1948), p. 84.

provide running space for the livestock which is a valuable factor for animal husbandry. In the interwar period the grass production of pastures in different parts of Trianon Hungary ranged between 3 and 90 quintals per hectare annually, a range that shows the great regional variation in the quality of pastures. The average pastures produced, per unit of land, only some 25 percent as much in nutritive value as the arable land.

ANIMAL HUSBANDRY

Animal husbandry contributed some 30 percent to the gross farm income of Trianon Hungary before World War II (Table 10), a proportion apparently higher than that which prevailed in Bulgaria, Rumania, or Yugoslavia, but one that compared poorly with such countries as Denmark, the Netherlands, or Switzerland, where livestock normally accounted for two-thirds of the gross farm income. With so much of the land used for grain for human consumption, the shortage of feedstuffs, as well as the lack of good meadows and pastures, was a limiting factor to any considerable expansion of livestock raising.

The idea of transforming crop cultivation more and more to the

TABLE 10.—SHARE OF ANIMAL HUSBANDRY IN THE GROSS VALUE OF AGRICULTURAL PRODUCTION, TRIANON HUNGARY, 1932–37*

(*Percent*)

Item	1932/33	1933/34	1934/35	1936/37
Livestock				
Slaughter	14.48	15.44	15.70	18.54
Milk	8.11	8.04	7.42	7.23
Sheep milk	.29	.26	.27	.20
Wool	.19	.28	.29	.35
Total	*23.07*	*24.02*	*23.68*	*26.32*
Poultry				
Slaughter	4.90	4.43	4.01	3.85
Eggs	2.38	2.61	1.73	1.66
Feathers	.21	.29	.30	.27
Total	*7.49*	*7.33*	*6.04*	*5.78*
Others				
Fisheries	.22	.35	.31	.23
Hunting	.17	.19	.21	.23
Beekeeping	.11	.09	.10	.09
Sericulture	.03	.02	.02	.02
Total	*.53*	*.65*	*.64*	*.57*
Grand total	*31.09*	*32.00*	*30.36*	*32.67*

* Data from Mátyás Matolcsy and István Varga, *Magyarország nemzeti jövedelme* [*National Income of Hungary*], A Magyar Gazdaságkutató Intézet 11. számu különkiadványa [Special Pub. No. 11 of the Hungarian Inst. for Econ. Res.] (Budapest, 1936); Mátyás Matolcsy and István Varga, *The National Income of Hungary 1924/25–1936/37* (London, 1938), p. 50.

production of animal feed was gaining popularity among government authorities as well as in public opinion. It was believed that a hectare of corn used for fattening pigs would yield more nutritive value in calories than a hectare of oilseeds. Árpád Ujlaki Nagy, in his valuable calculations (published in 1943) dealing with the food production and supply of Hungary, demonstrated that one hold, sown with corn to be fed to pigs, could produce 175–350 kilograms of fat and lard with a caloric value of 1.5–3.0 millions for human consumption, as against 100–200 kilograms of vegetable oil derived from oilseeds produced on the same hold, with only .75–1.5 million calories for human consumption.[1]

[1] *Editor's note*: It should be observed that in Hungary around 1940 the ratio of the yields of corn in quintals per unit of land to that of sunflower seed was exceptionally favorable, and that a rather high yield of fat per unit of feed seems to have been assumed.

Hungary's livestock herds were generally on the increase during the interwar period and up to 1942, when peak counts for Trianon Hungary were reached (Table 11). The later years of the war

TABLE 11.—LIVESTOCK IN HUNGARY*
(*In thousands*)

Year	Cattle and buffaloes	Horses	Asses and mules	Pigs	Sheep	Goats
Great Hungary (excl. Croatia-Slavonia):						
1911	6,184	2,001	19	6,416	7,698	331
Trianon Hungary:						
1911 (Feb. 28)	2,150	896	8	3,322	2,406	21
1935 (Feb. 28)	1,756	807	5	3,176	1,228	30
1938 (spring)	1,882	814	5	3,110	1,629	41
1942 (Feb. 28)	2,376	900	7	4,670	1,708	71
1945 (May 31)	1,070	329	4	1,114	328	58
1945 (Nov. 30)	1,007	370	4	1,152	313	64
1946 (May 31)	1,100	399	5	1,327	370	88
1946 (Nov. 30)	1,233	424	5	1,717	397	94
1947 (May 31)	1,479	490	6	1,894	508	102
1947 (Oct. 15)	1,608	...[a]	...[a]	2,937	...[a]	...[a]
1948 (Feb. 15)	...[a]	516	...[a]	1,992	...[a]	...[a]
Enlarged Hungary:[b]						
1940	2,614	989	6	4,648	1,750	88
1941	3,486	1,120	7	4,694	2,952	109
1942	4,351	1,342	11	6,364	3,752	175
1943	3,848	1,113	10	5,101	2,708	127
1944	3,718	1,153	9	5,396	2,809	138

* Data from Hungary, Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Zsebkönyv, 1948* (1948), p. 129, and *Magyar Statisztikai Évkönyv, 1948* (1948), p. 103.

[a] Not covered by census.

[b] Spring census.

brought a sharp decline in animal numbers, and by 1945 all herds in Trianon Hungary had been critically decimated, as is shown in the following tabulation (percentage decline):

	Spring 1939 to May 1945	February 1942 to May 1945
Cattle	−43	−55
Horses	−60	−63
Pigs	−79	−75
Sheep	−80	−81

Appendix Table VI compares the composition of the herds by age and sex in the years 1942, 1945, and 1946. Appendix Table VII, page 224, shows the composition by breeds in 1947.

The age composition of the livestock was decisively altered by the death of great numbers of the aged classes of horses and cattle during the war. The fact that the proportion of younger animals was greater in the postwar herds gave hope of favorable development and a more rapid increase in the livestock population.

After the war, general animal censuses were taken twice a year. However, a comparison with prewar age classes of livestock cannot be made easily because of different methods used in these censuses.

Cattle.—Cattle are less numerous in the Carpathian Basin than in Austria and Bavaria on the northern slope of the Alps, or in Saxony at the foot of the Bohemian Erzgebirge. Generally speaking, there is intensive breeding of animals in the highland areas where abundant rainfall favors rich natural pastures and the production of fodder harvested by man. It may also be said that—other things being equal—the density of cattle corresponds to the density of the human population, though the heavily populated middle and southern portions of the Carpathian Basin are an exception. There, cattle tend to be replaced by swine.

Cattle numbers in Great Hungary, which occupied the entire Carpathian Basin, increased from 5.2 million in 1870 to 6.7 million in 1895 and to 7.3 million in 1911. World War I interrupted this upward trend, and the herd was reduced to such an extent that as late as 1935 the same territory could count only 6.0 million head. For Trianon Hungary the 1911 and 1935 figures were 2.15 million and 1.76 million respectively (see Table 11). A new peak was reached in 1942, but losses in the last years of World War II cut the herd to less than half.

In the field of cattle breeding, the white longhorn Hungarian cattle have unfortunately been neglected despite the fact that this valuable breed was best acclimated. Simmenthal cattle, imported from the Alps, mainly Switzerland, were favored by the authorities, and they have proved very adaptable. Before the war, the internationally known German expert, Professor Hansen, established that the best average results with this breed had been achieved in Hungary. Simmenthal cattle thrive especially in Transdanubia, the western part of the country. The Hungarian dappled is a mixture of native cattle, Simmenthal, and others.

According to calculations around 1935, the annual per capita beef consumption in Trianon Hungary was 7.5 kilograms, which was small even in comparison with Rumania (9.5 kg.) and Yugoslavia (12.1 kg.). However, Hungary's per capita consumption of pork was twice that of either of these countries. Beef is scarce in the Great Alföld, and the cities lying in the plain and at its edge depended for their supply largely upon Transdanubia and the Northern Highlands. Even Transylvania, though agriculturally poor, was able to supply itself with beef (*4*, pp. 71–75, 297; *5*, p. 272).

The weight averages of cattle are not easy to determine, but for Hungary some reliable calculations have been made. Weights declined as a result of World War I, but the average live weights, as observed at the Budapest Municipal Public Slaughterhouses, increased significantly between 1925 and 1935 (Table 12). These

TABLE 12.—AVERAGE LIVE WEIGHT OF CATTLE BROUGHT TO BUDAPEST MARKET, 1925 AND 1935*

(*Kilograms*)

Sex or age group	Hungarian breed		Hungarian dappled	
	1925	1935	1925	1935
Bulls	537	642	584	766
Oxen	541	566	591	660
Cows	389	434	459	554
Young cattle	258	443[a]	...	...
Calves	64	75	...	...

* Data from *Budapest Székesfőváros Statisztikai Évkönyve*, various volumes.

[a] This exceptional increase is presumably due to change of categories used as basis of statistics.

data, of course, are not representative of the entire country since the Budapest averages were higher than those of other regions. Furthermore, the average weights of these cattle, which were fattened for slaughter, were higher than those of cattle in the country's stock.

The average production, exports, and domestic supplies of beef and veal in Trianon Hungary in the period 1925–38, as calculated by Árpád Ujlaki Nagy (*4*, pp. 71, 72) from data in the Hungarian statistical yearbooks, were as follows (in metric tons):

Item	Beef and young beef	Veal
Production	55,940	14,690
Exported as fresh meat	400	1,010
Domestic supplies	55,540	13,680
Per capita supplies (*kg.*)	*6.38*	*1.57*

The combination of domestic slaughter and live export resulted in an average annual disappearance of 26–27 percent of the total live weight of Hungarian cattle, which about offset the annual increase. A greater use of cattle would have meant a decrease of the total herd.

No proper statistical census of milk production was ever taken in Hungary, but a number of estimates have been made of both total output and yield per cow at various times and by different individuals and agencies. These estimates, given in Appendix Table VIII, show a low average yield per cow by Western European standards. Hungary has modern dairies where annual yields of 3,000 to 6,000 liters per cow have been obtained (and in some instances as much as 10,000 liters), but most of the cattle were kept on small peasant farms where yields ranged from 600 to 1,500 liters. In 1938, 80 percent of all animals in Trianon Hungary were owned by farmers with less than 100-hold estates (58 hectares), and in 1947, according to Dr. Sándor Nagy, director of the National Federation of Hungarian Milk Producers and Dairy Co-operatives, the same proportion (80 percent) of the total cow stock of Hungary was owned by one-cow families.

Cows on peasant farms were used for draft purposes, and this, coupled with the fact that the fodder supply—especially in arid areas and during drought seasons—was usually insufficient, affected milking results. Furthermore, the greater part of the peasants lacked the capital to provide their animals with proper shelter or care; barns and stables rarely met modern requirements of sanitation or facilities for feeding, milking, and control.

The period of milking on the average is 315 days, and the period between calvings 462 days. Each year during the interwar years, 76 percent of the average number of 900,000 cows calved. Milk used for animal rearing under Hungarian conditions may be taken as approximately 18 percent of the total production.

Per capita consumption of dairy products (in terms of milk) averaged only 150 liters annually in Trianon Hungary in the interwar period. Aside from the fact that the total milk output was low, the geographical distribution of the production was not in proper relation to the density of population. Consequently, milk had to be shipped great distances to the markets at exorbitant cost.

Horses.—Hungary has long been famous for its horses, the predominant type being a rather light, warm-blooded draft animal. The

cold-blooded, heavy horses bred in Western Europe are ill-suited to Hungarian conditions because of their slowness and high fodder needs. In the Great Alföld, where farmers' homes and holdings are commonly situated a long distance apart, and considerable time is spent each day in traveling that distance, the working capacity of these strong but slow animals could not be fully utilized. That is why the lighter horse predominates in the plains area, and why Hungarian agricultural authorities long ago fixed only the hilly areas of Transdanubia (West Hungary) for the breeding of the cold-blooded types. In the Carpathian highlands the horses are of smaller size than those of the plains, but these horses are tough and bear fatigue well.

The inroad of mechanical draft power upon horsepower in Hungary was negligible compared with that in the United States. The horse count in Hungary in 1938 was less than 10 percent below that of 1911 (Table 11, p. 175), whereas the decline in the United States was more of the order of 50 percent.

The average horse stock in Trianon Hungary for the years 1925–38 was 848,700. Of these, 153,540 were under three years of age; the annual average slaughter for meat was 19,980 head, the annual export balance was 23,060, and 11,010 died of natural causes or were destroyed (*4*, p. 147). Horse meat production for human consumption amounted only to some 3,400 metric tons, and the output of hides and hair was so small that imports were needed.

Árpád Ujlaki Nagy computed the annual actual working performance of the Hungarian horse stock, prior to the war, at some 600 million horsepower hours (physical units of work performance), which was much less than the possible maximum. For performing this amount of work and for maintenance, the horse stock used approximately 6,300,000 million calories in fodder. It is calculated that the horses in Trianon Hungary worked an average of 2,000–2,500 hours per year per animal (*4*, pp. 149–59).

The horse stock of Trianon Hungary numbered 900,434 head on February 28, 1942; by May 31, 1945 it had shrunk to only 329,026 (*3*, p. 130). This decimation seriously affected the postwar development of farming. The new small holdings—some half-million—created by the land reform of 1945 were in great need of draft animals, especially horses. However, small holdings up to 10 cadastral holds were usually unable to bear the burden of horse keeping. The farmers prefer to keep cows that can both work and produce milk.

The horse stock after the war was unsatisfactory in quality as well as quantity. Losses during the last years of the war were chiefly among good-quality breeding animals. The remaining horses were overworked and improperly fed, and they were generally unhealthy, many being infected by dourine.

The reorganization of horse breeding had made good progress by 1948. On February 15 the count stood at 516,000, and by the second half of the year it had risen to 657,000 (*6*, p. 2; *7*).

Pigs.—Pig raising is very important in Hungary. From the point of view of meat and fat production—consumption habits being what they are—it is even more important than cattle raising. The Hungarians are traditionally heavy eaters of cured or smoked lard. It has been estimated that for the welfare of the Hungarian households an annual average of 18–20 kilograms per capita of fat alone would be needed. This would require a total production of some 160–180 million kilograms of fat for Trianon Hungary, a level never reached in the interwar years, and of course far above the postwar output. Of pork meat and fat combined, the per capita consumption around 1935 averaged 21.9 kilograms a year, as compared with 9.2 in Rumania and 8.6 in Yugoslavia.

Pig raising varies considerably even within limited areas, depending upon the corn production. Of neighboring districts, one may have a great abundance of pork, another a marked shortage. As a result, trade in pork and fats is very lively among different parts of regions. In the Carpathian Basin, Transdanubia and the southern and eastern parts of the Great Alföld had the greatest surplus of pork, while the northern region of the Carpathian Mountains and Transylvania were deficit areas. The inhabitants of the borderlands of the Carpathians may be well supplied with pork by the Great Alföld and Transdanubia. The Carpathian Basin is rich in swine for fat, while the neighboring areas are deficient in fat because their pig stock, though large, is composed for the most part of baconers.

Fat-type pigs predominate in Hungary, the most numerous being the *mangalica*; introduced from the Balkans, mainly Serbia, during the last century, this breed had to a considerable extent supplanted the native *szalontai* and *bakonyi* by 1900. In the interwar period, however, meat-type pigs, originally imported from England and, to some extent, Germany, gained ground rapidly owing to the growing domestic and export demand for their meat and to their advantages

of greater weight and prolificacy.[2] The following percentage breakdown of the total pig stock of Trianon Hungary into the two types indicates the trend since 1925:

Year	Fat types	Meat types
1925	94	6
1938	81	19
1947 (Oct.)	67	33

After the mass slaughtering of pigs during the last years of the war the meat types staged a more rapid recovery because of their great prolificacy.

In Trianon Hungary, the census (end of February) counts of the total pig stock averaged 2.6 million head over the 14-year period 1925–38. The total was distributed as follows with respect to sex and age (*4*, pp. 99, 302, 303):

Sex and age	Thousand head	Percent
Boars, 1 year and over	37	1.4
Sows, 1 year and over	556	21.4
Castrated males, 1 year and over	248	9.5
Boars under 1 year	227	8.75
Sows under 1 year	785	30.2
Castrated males under 1 year	747	28.75
Total	2,600	100.0

The census, however, does not give an accurate indication of the consumption possibilities. Being taken at the end of February when the stock is at its lowest point it does not include the pigs of the March–June litter (approximately 55–60 percent of the total annual litter; the other important farrowing period is November–February, with some 25 percent of the total) that are slaughtered during the following winter. The pig stock reaches its maximum around the first of July, the 14-year average as of that date being 3.4 million head, compared with the 2.6 million in February. The lowest February count during the period was 2.5 million, and the highest July count was 3.75 million.

[2] English-type sows reach maturity much earlier than the mangalicas; the former are generally bred for the first time at 10–14 months, the latter at about a year and a half. The mangalicas usually bear a litter of 6 or 7 piglets, while the English-type sows drop anywhere from 8 to 24. Furthermore, the English- and German-type sows have two litters a year, whereas the native types, including mangalicas, in the big breeding estates farrow three times in two years, those on small farms only once a year.

Trianon Hungary's average pig stock in the interwar period was distributed by age groups as follows (percent):

Under 1 year	67.2
1–2 years	20.0
2–3 years	7.0
3–4 years	3.0
Over 4 years	2.8

Sows over 1 year of age averaged 21.4 percent of the total stock, numbering 552,000, and each year some 330,000 to 340,000 became mature for breeding.

The following tabulation indicates the level of annual exports of pigs and pig products from Trianon Hungary in the interwar period:

Product	1925–38 average	1938
Live pigs (*number*)	161,962	228,792
Meat (*tons*)	1,616	2,037
Percent of total output	*12.8*	*18.7*
Fat and fat products (*tons*)	14,427	22,118
Percent of total output	*20.7*	*33.4*

Before the war, fat-type pigs were fattened for slaughter for a period of 3–8 months, mostly on maize and barley, to a certain extent on distillers' mash, oilcake, bran, and meat and fish meal. Meat-type pigs were fattened in a special way for 1–4 months, generally three months. The total weight added by fattening was calculated by Árpád Ujlaki Nagy as 60,000–75,000 tons per year in 1925–38. He estimated the total weight of the annual average pig stock, comprising 2.6 million pigs, at 180,000 metric tons. The average weight of the pigs was thus 70 kilograms.

The distribution according to categories of pigs slaughtered for consumption in Trianon Hungary, as an annual average in 1925–38, was calculated by Ujlaki Nagy as follows (weights in thousand tons):

Category	Thousand head	Live weight	Carcass weight
Sucklings	200	1.2	.8
Weanlings	50	1.2	1.0
Porklings for ham	200	14.0	12.4
Improved young pigs, about 1 year old	350	31.5	24.5
Lean or poorly fattened old meat types	40	4.8	3.4
Young fat types, 1¼–2½ years old	1,100	176.0	148.5
Old, inferior quality fat-type pigs	60	15.6	13.5
Total	2,000[a]	244.3	204.1

[a] Rounded figure. According to basic calculations it should be 2,075 thousand.

However, the total in the tabulation appears to be an understatement. More pigs are slaughtered on farms than in public slaughterhouses. Since about 60 percent of the pig stock was raised on small and dwarf holdings and by landless people whose killings are not recorded, estimates of farm slaughterings are subject to wide variation. The Hungarian Institute for Economic Research estimated that 2,660,000 pigs were slaughtered in private households in 1934/35. Slaughterhouse killings in the same year, according to the *Yearbook* of the Hungarian Central Statistical Office, amounted to about 1,200,000 pigs, giving a total of 3,860,000.

Unfortunately, no later prewar figures on pig slaughtering are available. The *Statistical Yearbook* for 1948 gives the following data on the number of pigs slaughtered in slaughterhouses (*3*):

Enlarged Hungary	
1940	1,666,259
1941	1,347,138
1942	1,185,514
1943	991,435
Trianon Hungary	
1946	84,385
1946 (forced slaughter)	31,388

In spite of the fact that as a result of reannexations of territories Hungary's human population grew from 9 million to nearly 15 million and the pig stock was considerably increased, the number of pigs slaughtered in slaughterhouses showed a marked decline. This was due to all kinds of difficulties in public supply, price freezes, and growing black-marketing possibilities. The figures for 1946 reflect the critical situation of the early postwar period. Table 11 (p. 175) shows the drastic decline in the total pig stock.

As soon as any restrictions are imposed on production and distribution of pig meat and fat, the small producers try to escape controls and sell on the black market. The quantities they dispose of are more or less uncontrollable from the standpoint of public supply and of the statistical services. This was the situation in the first year of restrictions on production and marketing of food products during World War II, and it continued throughout the war and into the postwar period. The more rigid the controls the more clever the small producers became. Pigs were easy to smuggle because of the freedom for private slaughter, and because of the great abundance of litters; and the prevalence of animal diseases gave credibility to false reports of deaths from that cause. The results of such

practices are implicit in the data in the above tabulation on slaughterhouse killings in 1940–46. There was a considerable shortage of pork and fat in the public markets, but both were available on the black market—at exorbitant prices.

Árpád Ujlaki Nagy put the number of pigs in Enlarged Hungary in the spring of 1941 at 4.7 million (see also Table 11, p. 175), and estimated that the stock increased to a seasonal peak (June-July) of 6–7 million. At an average of 70 kilos per pig, the spring pig stock had a total live weight of 330,000 tons. Applying proportions and weights as in Trianon Hungary (p. 182), Árpád Ujlaki Nagy arrived at a total slaughter of 3.75 million pigs in Enlarged Hungary, with a total live weight of around 450,000 tons and a carcass weight of 380,000–385,000 tons (*4*, p. 136). Of course, these are theoretical figures, but being calculated on the basis rather of minimum possibilities than of maximum, they are reasonably reliable. No detailed calculations have been made as to the proportion and quantity of meat and fat produced *during the war years. However, an annual 500,000 tons of meat, fat, and entrails combined seems a safe approximation* for Enlarged Hungary. However, since the reannexations increased the fodder supply relatively less than they increased the number of pigs, it must be considered that the meat and fat production could not have reached as high a level as was theoretically estimated. *The fat and pork supply, no doubt, was inferior to that of the prewar years.*

The years 1944 through 1947 were very unfavorable for pig raising and the production of pork and fat. The limitations imposed on slaughtering aimed at a more rapid increase of the depleted animal stock. The proportion of pigs being fattened at the spring census was only 2 percent in 1945 and 4 percent in 1948, as contrasted with 10–15 percent under normal circumstances. The low percentage of fattening pigs in the total stock helped considerably to increase the pig stock of the country in the late 1940's.

Sheep.—Sheep raising in Hungary, once a major branch of agriculture, lost much of its importance as crop farming expanded. From a peak of 16–17 million head around 1825, the total flock in Great Hungary declined to 10.5 million in 1884 and to 7.7 million in 1911. In that year the territory of Trianon Hungary had 2.4 million sheep, and the continuing decline reduced the count to a low point of one million in 1934.[3] Moderate expansion thereafter

[3] An indication of the relative importance of sheep in comparison with the other animals in Trianon Hungary's livestock herd is given by the following live

brought the number to 1.6 million in 1938 and to 1.7 million in 1942 (February). To this latter figure the reannexed territories added slightly more than two million head, to make a flock of 3.75 million in Enlarged Hungary (Table 11, p. 175). The reannexed regions, particularly Kárpátalja and Northern Erdély with their good mountain pastures, afforded excellent possibilities for sheep raising, but they had not been fully utilized during the interwar period when these territories did not belong to Hungary.

In point of proportion, Hungary's sheep stock suffered more than any other livestock from the war. A comparison of prewar and postwar figures indicates a loss of some 80–82 percent. Efforts to increase the number of sheep since the war have met with moderate success.

In Trianon Hungary during the interwar period, "short-fleece" sheep (merinos and merino-native crossbreeds) far outnumbered the "long-fleece" (*racka* and *cigaja*), the former comprising some 94–95 percent of the total stock. The "long-fleece" types, on the other hand, made up more than half of the total in Enlarged Hungary (1941–44). In postwar Trianon Hungary, in the autumn of 1947, the flock was composed of 84 percent "short-fleece" and 16 percent "long-fleece" sheep.

The following tabulation shows the average percentage composition, by age and sex, of Trianon Hungary's sheep stock in 1925–28 (*4*, p. 321):

Age	Rams	Ewes	Wethers	Total
Over 1 year	2.72	59.44	12.64	74.80
Under 1 year	3.56	14.05	7.59	25.20

The proportion of ewes over 1 year old in the total sheep stock remained quite constant at about 60 percent during the interwar years. With lamb ewes comprising a constant 14 percent, this implies a complete turnover of the stock of mother ewes every 4–5 years.

It is impossible to determine accurately the total number of sheep slaughtered annually because much of the slaughtering is on

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weight ratios based on the average total herd in 1925–38, as calculated by Árpád Ujlaki Nagy (*4*, p. 162):

Cattle	Horses	Pigs	Sheep
14	6.7	3.5	1.0

The unit figure for sheep represents a total live weight of 50,000 tons (*6*, p. 168); Professor Frigyes Fellner (*8*) estimated this total at 49,500 tons for 1927.

farms and is not recorded. Ujlaki Nagy, for his calculation of meat consumption in Trianon Hungary, accepted the estimate of 570,000 head as the average yearly slaughter in 1925–38 (abattoir butcherings in that period averaged 293,721 head per year). Assuming a carcass weight of 15 kilograms (50 percent of the average live weight) he arrived at a total mutton production of 8,500 tons, which would have provided an average annual supply of only .83 kilogram per capita (*4*, pp. 171–73). This figure indicates the almost negligible importance of mutton in the Hungarian diet.

An average of 44,521 live sheep, weighing 1,778 tons, and 366.8 tons of fresh mutton were exported each year in 1925–38.

Few sheep were milked in Trianon Hungary and the milk production was very small. It has been estimated that in the 1930's some 20–25 percent of the ewes were milked, and the average yearly yield per ewe was approximately 50 liters, giving an annual output of 60,000–80,000 hectoliters (6,000–8,000 tons). Virtually all of the milk was processed into *gomolya*, a cream cheese, 1 kilogram of which could be obtained from 6–7 liters of milk. Milking of sheep was more common in the reannexed territories, but no estimates of production are available.

Although Hungary's wool production was important for her textile industry, the domestic supply was far below requirements. The total output averaged around 8 million kilograms a year in Trianon Hungary. The sheep were usually sheared once a year, and herd-average yields of 4 kilograms of wool per sheep were considered good. For the total stock the yield per sheep probably averaged 3.5 kilograms.

Goats.—Goat breeding had a social rather than an economic significance in Hungary prior to the war. In 1938 goats in Trianon Hungary numbered 41,445, i.e., 4.6 per thousand inhabitants. For Enlarged Hungary in 1942 Ujlaki Nagy estimated the number at some 130,000 head, or 8.75 per thousand inhabitants (*4*, pp. 188, 327). The official spring census of that year counted 175,000 goats in Enlarged Hungary and 71,000 in the Trianon territory. Of all the Hungarian livestock the goat stock suffered least from the war, and its postwar recovery was rapid mainly because of the shortage of cow's milk. By 1947 the Trianon territory had 102,000 goats (see Table 11, p. 175).

Some 55–60 percent of the goat stock is milked. The average annual yield per milk goat is estimated at 500–600 liters, though yields of 700–1,000 liters were not uncommon, and 2,000-liter yields have

been recorded. An average of around 30,000 goats was slaughtered annually in 1925–38, with a total of some 560 tons live weight and giving about 280 tons of meat (*4*, pp. 186, 187, 189).

Poultry.—The importance of poultry in Hungary's agriculture is underlined by the fact that its annual production of 77,005 tons of meat and 14,575 tons of fat—a total of 91,580 tons—exceeded the production of meat and fat of the cattle, sheep, and horse stock.

Table 13 gives data on the poultry stock at various dates between

TABLE 13.—POULTRY STOCK OF TRIANON HUNGARY*
(*Thousands*)

Date	Chickens	Turkeys	Geese	Ducks	Pigeons
May 31, 1928	28,719	760	4,726	3,339	1,341
Feb. 28, 1935	17,880	369	2,287	1,395	995
Possible stock by May 1, 1935	40,000	1,170	8,500	5,700	1,500
Oct. 27, 1940	24,612	444	2,014	1,732	...
May 31, 1946	...	120	1,200	1,500	...
May 31, 1947	24,854	294	2,896	3,993	...
May 31, 1948	28,182	487	...	...	...

* Data from Árpád Ujlaki Nagy, *Élelmiszertermelésünk és ellátásunk* (Budapest, 1943), p. 329; Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Zsebkönyv 1948* (1948), p. 129; and *Gazdaságstatisztikai Tájékoztató*, Vol. 1, p. 484; Vol. 2, pp. 255, 632; Vol. 3, p. 146.

1928 and 1948. Since poultry numbers are subject to wide fluctuations in the course of a year, statistics, apart from their questionable reliability, are valid only for the very date of the census. According to Ujlaki Nagy's estimates shown in Appendix Table IX, chickens made up about half of the total weight of Trianon Hungary's poultry flock in the interwar period, but in the case of consumption of poultry meat and fat, geese contributed slightly more than chickens (Table 14). Ujlaki Nagy calculated that the annual per capita consumption of poultry meat and fat fluctuated between 7.5 and 9.1 kilograms, averaging 8 kilograms (*4*, p. 216).

Hungary's poultry products, especially those of a certain luxury character, had well-established markets abroad long before World War II; their export to neutral countries during the war was promoted to increase the supply of free foreign currencies for the country. Exports of poultry meat and fat in 1925–38 averaged 19,800 tons—21.6 percent of the total production. During that period the maximum export was 26,700 tons and the minimum was 12,600 (*4*, pp. 216, 230, 231; *1*, pp. 196–205 *passim*).

TABLE 14.—CONSUMPTION OF POULTRY IN TRIANON HUNGARY, ANNUALLY, 1925–38 AVERAGE*

(*Thousands*)

Kind of poultry consumed	Number (*thousands*)	Live weight	Carcass weight	Meat	Fat
		(*metric tons*)			
Chickens	30,000	42,750	34,000	34,000	—
Geese	6,750	41,625	35,200	24,325	10,875
Ducks	4,500	17,675	15,000	11,700	3,300
Turkeys	1,200	8,400	7,200	6,800	400
Pigeons	600	250	180	180	—
Total	43,500	110,700	91,580[a]	77,005	14,575

* Data from Árpád Ujlaki Nagy, *Élelmiszertermelésünk és ellátásunk* (Budapest, 1943), p. 214.

[a] The consumable entrails can be estimated (together with blood) approximately at 10,000 metric tons.

The annual egg production of the chicken stock was estimated by Ujlaki Nagy at 1,000 million eggs on the basis of an average yield per laying hen of 90 eggs per year. Assuming 20 eggs per kilogram, the total weight of the output was about 50,000 tons. Of the 1,000 million eggs produced yearly, some 50 million were used for hatching. Some 30–50 million duck eggs, weighing from 1,500 to 2,500 tons, were also used for human consumption. Hungary's export of eggs averaged some 11,000 metric tons a year in 1925–38. The domestic consumption of eggs thus can be estimated at approximately 40,000 metric tons, and the average annual per capita consumption at 4.6 kilograms, corresponding to some 90 eggs. It is estimated that about 75–80 percent of the total annual egg consumption was used in households. This implies an average direct consumption of slightly more than one egg per day per five-member household.

Poultry raising in capital-deficient Trianon Hungary owed its importance to the fact that it did not require a large capital investment. This branch of animal husbandry recovered most rapidly from the tremendous war losses.

Fishing.—Fish are produced in Hungary from the natural fresh waters and from fish ponds. The fishing industry on the natural lakes—Balaton, Fertö, and Velencei Tó—was based on artificial stocking as well as on the natural supply; the fish were artificially fed. The fishing industry produced prior to the war some 7,000–8,000 metric tons of fish—57 percent from the open waters, and 43 percent from the fish ponds—out of which quantity an average of 1,300 metric tons annually was exported. The domestic per capita

consumption of fresh-water fish was thus about 0.65 kilograms a year. Imports of sea fish into Trianon Hungary were insignificant, totaling only 33.5 tons during the 8 years 1931–38.

It has been estimated that in Enlarged Hungary the annual average fish production during the years 1940–44 was approximately 10,000 metric tons. If this is true, the annual per capita consumption decreased.

Apiculture.—The significance of beekeeping and production of honey and beeswax was not very great; however, it is not to be ignored. Appendix Table X (p. 226) comprises data on beekeeping and production of honey and beeswax in Trianon Hungary during the years 1925–38, 1944, and 1945, as well as for Enlarged Hungary in the years 1941 and 1942. Annual exports of honey and beeswax averaged 311 and 6.5 tons respectively in 1925–38.

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CHAPTER 3

FOOD SUPPLY

ENERGY VALUE (CALORIE CONTENT) OF AGRICULTURAL PRODUCTION

One of the most detailed and reliable calculations relative to the nutritive value of the agricultural production of Hungary is that of Árpád Ujlaki Nagy (*1*). The following description of the food-energy balance is based on this work. Unless otherwise indicated, all data are annual averages for the period 1925–38.

The value of the annual vegetal production of Trianon Hungary for producing heat and energy in human or animal bodies was approximately 42 trillion calories (computed on the basis of starch equivalent). The origin and use of this amount of calories are given in Table 15.

According to these data, some 63 percent of the total calories in vegetal production was used for animal feed, and only 22.2 percent went directly into human nutrition. Net exports of vegetal products usable for human nutrition amounted to 26.7 percent of the calorie value of the total output of these products, leaving some 7 trillion calories for domestic consumption.

The annual fodder *requirement* of the total animal stock of Trianon Hungary (including game and fish artificially fed) was 739,000 tons of digestible protein, and 5,810,000 tons of starch equivalent with a value of 28 trillion calories.[1] The production of vegetal fodder was 26.7 trillion calories (Table 15); fodder of animal origin added no more than .05–.07 trillion. Net exports of fodder amounted to some 120,000 tons of starch equivalent, or more than half a trillion calories. Thus the calculated nutritive value of the fodder available for domestic use did not exceed 26.3 trillion calories—6 percent under the ideal requirement (*1*, p. 243).

[1] These figures of total nutritive requirements of the total animal stock of Trianon Hungary were arrived at by Árpád Ujlaki Nagy by using as a basis the standard feed requirements of the various kinds of domestic animals in Hungary in 1925–38 as established by professors Weiser-Zajtay and Schandl (*2*, *3*), and apportioning them according to average composition of the total stock in that period.

Editor's note: The conversion coefficient used is apparently 4.8 calories (large) per gram of starch.

TABLE 15.—THE ENERGY VALUE OF VEGETAL PRODUCTION OF TRIANON HUNGARY*

(Starch equivalent in American trillion calories)

Source	Total nutritive value of vegetal production	Final use				
		Returned to soil	Animal fodder	Industry and fuel	Loss by industrial processing	Human food
From arable land:						
Unprocessed	24.15	4.35	19.80	—	—	—
Processed	12.40	—	1.80	1.60	.11	8.89
From gardens, orchards, and vineyards	1.00	.18	0.30	.02	.01	.49
Products of meadows	2.50	—	2.50	—	—	—
Grazing use of pastures	1.80	—	1.80	—	—	—
Use of fallow and stubble lands, courts, threshing floors, etc.	.60	—	.50	.03	—	.07
Total	42.45	4.53	26.70	1.65	.12	9.45[a]

* Data from Árpád Ujlaki Nagy, *Élelmiszertermelésünk és ellátásunk* (Budapest, 1943), p. 239.

[a] The average per capita per year quantity of domestic vegetal food apparently consumed during the interwar period was 791,000 calories, thus the total—calculated on the population of 8,700,000—was 6.88 trillion calories. In the average of value for the same period, the export of the same kinds of foods represented approximately 2.4–2.5 trillion calories annually.

The annual fodder requirement per 1,000 kilograms live weight of the animal stock was about 540 kilograms of digestible protein and 4,280 kilograms starch value (i.e., 20.7 million calories). The theoretical unit of the livestock needs 56 calories daily for every kilogram of live weight.

It must be remarked here that the Hungarian livestock could have yielded much more products if it had been fed more plentifully. For example, the cow stock of Hungary (Trianon territory) could have produced twice as much milk annually against an additional fodder quantity of 350,000 metric tons starch value worth 1.5–1.75 trillion calories. The meat production of cattle, the meat and fat production of the pig stock, and the output of poultry products could have been improved to an even greater degree. The livestock population also could have been increased if more and better fodder had been fed. This speculation is important from the point of view of more profit per livestock unit and of better coefficient of transformation.

The supply of fodder for the total livestock of Enlarged Hungary, during the war years, was still worse. Specifically, the calculated ideal fodder requirement of the livestock of Enlarged Hungary represented some 50–52 trillion calories or some 10,700,000 metric tons of starch value (including 1,300,000 metric tons digestible protein). Compared to this ideal requirement the available quantity of fodder (grazing, etc., included) could contribute only some 43–44 trillion calories; thus there was a deficiency of about 15 percent (*1*, p. 248). Consequently, the fodder situation in Enlarged Hungary was inferior to that of Trianon Hungary, where the deficit was only about 6 percent. This disparity reflects differences in the development of animal husbandry and levels of grain production in Trianon Hungary on the one hand and, on the other, certain of the reannexed territories, chiefly Kárpátalja (Subcarpathian Region) and Erdely (Northern Transylvania), where agricultural practices were relatively backward (see pp. 164–65).

The proceeds of the livestock of Trianon Hungary can be summarized in four principal groups as given in Table 16.

Table 17, also produced by the Hungarian Institute for Economic Research, comprises percentages showing destination of nutritive products produced in Trianon Hungary, according to content of calories, proteins, fats, and carbohydrates.

The total domestic consumption of calories and proteins, fats and carbohydrates, was supplied in the following percentage propor-

TABLE 16.—PROCEEDS OF THE LIVESTOCK OF TRIANON HUNGARY, 14-YEAR ANNUAL AVERAGES, 1925–38*

Item	Thousand metric tons	Million calories
Foods produced by livestock, including game, fisheries, bees	1,938.9	2,768,120
Domestic consumption	1,745.0	2,330,400
Exported	193.0	437,720
Raw material usable by industry[a]	85.0	—
Manure produced	21.6	—
Cattle	13.6	—
Horses	4.5	—
Pigs	1.9	—
Sheep and goats	1.0	—
Poultry	.4	—
Energy produced	—	850[b]
Cattle	—	250[b]
Horses	—	600[b]

* Data from Árpád Ujlaki Nagy, *Élelmiszertermelésünk és ellátásunk* (Budapest, 1943), pp. 249–53.

[a] Hides, skins, hair, wool, fur, internals, blood, feathers, beeswax, silk, animal cadavers, etc.

[b] Million horsepower-hours.

tions from domestic production and imports on the average during the 12 years 1924–36 (*4*, p. 42):

Source	Calories	Proteins	Fats	Carbohydrates
Supplied by domestic production	98.01	98.50	98.29	97.90
Supplied by imports	1.99	1.50	1.71	2.10

FOOD CONSUMPTION

According to data published by the Hungarian Institute for Economic Research, the average daily consumption in calories and

TABLE 17.—DESTINATION OF NUTRIMENTS PRODUCED IN HUNGARY*
(*Percent*)

Item	Domestic consumption			Exports		
	1933–34	1934–35	1935–36	1933–34	1934–35	1935–36
Calories	72.1	83.7	84.8	27.9	16.3	15.2
Proteins	72.8	82.7	83.5	27.2	17.3	16.5
Fats	79.8	84.1	87.4	20.2	15.9	12.6
Carbohydrates	69.9	74.4	83.9	30.1	25.6	16.1

* Data from A Magyar Gazdaságkutató Intézet 12. számú különkiadványa, *Magyarország nyersanyaggazdaságára és népélelmezésére vonatkozó adatok* (Budapest, 1937), p. 42.

grams per adult male in Trianon Hungary during the years 1934–38 was as follows (*4*, pp. 42, 44; *5*, p. 37):

Year	Calories	Proteins	Fats	Carbohydrates
1933/34	3,286	100	63	579
1934/35	3,321	97	83	544
1935/36	3,244	95	81	531
1936/37	3,318	96	81	550
1937/38	3,444	99	81	577

In the computation of the above data for an adult male, 3.5 units of consumption (Engel units) were taken.

For the immediate prewar years no data were available. In 1938/39, when the food consumption reached its peak, it still did not come up to the League of Nations Nutritional Standards. The war years brought about further deterioration of the average food consumption per capita, although certain working classes were better fed than before. Table 18, prepared by the Hungarian Institute for Economic Research, shows "actual" consumption (supplies available for consumption) as compared with requirements according to League of Nations standards.

The food situation and agricultural production of Hungary were reviewed by Dr. Zsuzsánna Mártha in a study published by the Hungarian Institute for Economic Research in 1946. On the basis of the standard adopted by the League of Nations Health Committee, Dr. Mártha estimated the annual food requirements of the 9.1 million people of Trianon Hungary as follows (*6*, p. 12):

Calories	11,488,000,000,000
Proteins	302,700 metric tons
Animal proteins	165,100 metric tons
Fats	438,700 metric tons

In 1938/39, when the level of food consumption was higher than in any other year between the two world wars, the food consumed supplied 80 percent of the calories, 96 percent of the protein (including 54 percent of the proteins of animal origin), and 58 percent of the fats required according to the League of Nations standards. At the same time Trianon Hungary exported food, but even with a complete stoppage of such exports the requirements would not have been covered.

In 1945/46, when Trianon Hungary was still suffering very seriously from the effects of the war, the food available could not

TABLE 18.—FOOD REQUIREMENTS OF TRIANON HUNGARY BY LEAGUE OF NATIONS AND ACTUAL CONSUMPTION*

Item	Requirements	"Actual" consumption		Estimated consumption
		1938/39	1945/46	1946/47
		(*Thousand metric tons*)		
Bread grains	1,750	1,925	1,230[a]	1,426
Potatoes	1,000	1,045	1,070	513
Legumes	65	70	69	34
Fats	260	141	47	85
Meat and poultry	600	323	71	215
Eggs	130	52	31	41
Milk	2,000	1,128	445	570
Fruit	700	422	253	376
Vegetables	800	472	372	358
Sugar	220	125	6	61
		(Index numbers: Requirements = 100)		
Bread grains	100	110.0	70.3	81.4
Potatoes	100	104.5	107.0	51.3
Legumes	100	107.7	106.1	52.3
Fats	100	54.2	18.1	32.7
Meat and poultry	100	53.8	11.8	35.8
Eggs	100	40.0	23.8	31.5
Milk	100	56.4	22.2	28.5
Fruit	100	60.3	36.1	53.7
Vegetables	100	59.0	46.5	44.7
Sugar	100	56.8	2.7	27.7
		(Index numbers: 1938 = 100)		
Bread grains	90.9	100	63.8	74.0
Potatoes	95.7	100	102.4	49.1
Legumes	92.8	100	98.5	48.6
Fats	184.4	100	33.3	60.3
Meat and poultry	185.7	100	22.0	66.6
Eggs	250.0	100	59.6	78.8
Milk	177.3	100	39.4	50.5
Fruit	165.9	100	59.9	89.1
Vegetables	169.5	100	78.8	75.8
Sugar	176.0	100	4.8	48.8

* Data of the Hungarian Institute for Economic Research, from National Bank of Hungary, *Hungary in Statistical Tables* (Budapest, 1947), p. 7. "Actual" in the sense of available for consumption ("apparent consumption").

[a] Including 200 metric tons of barley and 200 metric tons of maize used as substitutes.

supply more than some 50 percent of the required calories, 63 percent of the total proteins, 17 percent of the proteins of animal origin, and 21 percent of the fats.

According to the calculations of Dr. Mártha, the *per capita* daily averages for the total populations were as follows (*6*, p. 31):

	Requirement standard	Consumption	
		1938/39	1945/46
Calories	3,459	2,768	1,733
Proteins (*grams*)	91	87	57
Animal proteins (*grams*)	50	27	9
Fats (*grams*)	132	77	28

In the conclusion of her research and calculations, Dr. Mártha states that to cover the requirements of the population of Trianon Hungary and enable the country to pay for indispensable imports with agricultural products, agricultural production would have to be increased substantially. This would involve not only better rotation of crops, better tillage, and a greater use of artificial fertilizers, but also a reorganization of production.

In spite of the general belief that the per capita supply of foods in Enlarged Hungary was greater than in Trianon Hungary, reliable data attest otherwise. The majority of the reannexed territories were inferior from the point of view of agricultural development, owing partly to backward conditions, partly to natural circumstances. Árpád Ujlaki Nagy reviewed in great detail the conditions in the above territories. His findings are summarized in Table 19.

Of course, the data comprised in the above tables are of theoretical value, and were theoretically calculated. The data do not include foods and spices imported from abroad. The foods exported have been deducted from production. For Enlarged Hungary the percentage of food exported in this period was assumed to be equal to the average for Trianon Hungary in the interwar years.

The indicated per capita quantities of food available for consumption are not sufficient as compared with either the League of Nations Health Committee standard requirements or consumption levels in other European countries. Especially, the consumption figures for meat, milk, fish, fruit, eggs, sugar, and beer in Hungary are lower than in the Western European countries.

Before the war, the distribution of foods in Hungary was uneven, owing to the fact that a large part of the population did not have adequate income to buy any of the more expensive foods. Therefore, the per capita figures discussed above represent only the average situation. But during the war, the distribution of food became far more equalized as a result of food rationing, and because large classes

of the population came to better earnings or were serving in the army.

TABLE 19.—PER CAPITA QUANTITIES OF FOODS AVAILABLE FOR CONSUMPTION IN TRIANON HUNGARY AND ENLARGED HUNGARY, ANNUAL AVERAGES, 1925–38 AND 1941–44*

Food	Trianon Hungary 1925–38	Enlarged Hungary 1941–44	Trianon Hungary 1925–38	Enlarged Hungary 1941–44
	(*kilograms*)		(*calories*)	
Foods of vegetable origin....	421.00	358.30	791,000	726,000
Wheat flour	107.5	100.5	381,625	356,775
Rye flour	39.5	32.8	138,250	114,800
Pearl barley and barley flour	2.35	3.00	7,755	9,900
Corn and corn flour.....	6.4	10.8	23,680	39,960
Millet and buckwheat.....	.35	.51	1,067	1,555
Pulses	3.93	3.8	12,970	12,540
Poppy seed	.70	.52	3,797	2,821
Vegetable oil	.40	.65	2,800	4,550
Potatoes	119.5	108.2	114,720	103,872
Sugar	10.46	8.4	41,840	33,600
Greens and vegetables.....	41.3	28.5	11,357	7,837
Fresh fruits, including melons and grapes.....	49.3	31.4	19,125	12,560
Must and wine	33.0	23.0	24,750	17,250
Beer	4.0	3.5	2,000	1,750
Brandy	1.15	1.50	3,220	4,200
Other vegetal foods.....	1.16	1.22	2,044	2,030
Foods of animal origin.....	198.50	213.70	267,000	261,000
Meat (excluding poultry, game and fish).....	20.88	22.1	37,420	38,375
Poultry meat and internals	7.43	6.50	10,860	9,500
Meat of game	.32	.30	353	330
Fresh-water fish, domestic.	.60	.40	510	340
Fats of pigs.....	11.55	10.67	98,175	90,695
Fats of poultry.....	1.40	1.20	11,900	10,200
Milk of cows, sheep, goats	151.05	168.00	98,275	103,460
Eggs	4.6	4.0	7,636	6,640
Honey	.19	.15	570	450
Other foods of animal origin	.48	.38	1,301	1,010
Total food	619.50	572.00	1,058,000	987,000

* Data from Árpád Ujlaki Nagy, *Élelmiszertermelésünk és ellátásunk* (Budapest, 1943), p. 338. The populations upon which these figures are based are 8,712,000 for Trianon Hungary, and 15,250,000 for Enlarged Hungary.

FOOD SUPPLIES AND RATIONING DURING WORLD WAR II

Prior to the war the diet for the country as a whole was substantially better than the average for Rumania, Yugoslavia, or even Bulgaria. A smaller proportion of the calories was provided by cereals (some 60 percent as compared with over 70 percent for the other three countries), while the consumption of maize—an index to the poverty of a diet—was much lower. Furthermore, the consumption of meat, milk, fats, and sugar was considerably higher in Hungary than in the other three countries. Little butter was eaten, lard being the principal source of fat.

There were, however, wide variations in the quality of the diet among different parts of the country and different sectors of the population, as has been mentioned before. In western Hungary, well-to-do peasants who kept pigs and poultry for their own use as well as for sale were fairly well fed. Meat was eaten regularly three or four times a week, and poultry, eggs, and vegetables formed a normal part of the diet; coffee and sugar were consumed daily. The German Swabian settlers, the *svábok*, ate large quantities of pig fat. In the Great Hungarian Alföld, too, the wealthier peasants could afford plentiful supplies of chickens, eggs, and fruits for their own consumption, whereas the poorer peasants had to sell their output. Throughout the plain, large quantities of grain and pig fat were eaten, but, since few cows were kept in this region of the country, little milk and less butter were consumed. As everywhere in Hungary, town and country alike, white wheat bread was eaten.

Agricultural laborers and their families were undoubtedly the worst-fed sector of the population. It is doubtful whether this class always got enough energy foods; it is certain that its consumption of protective foods was much too low. The staple food was white bread, plus beans, potatoes, cabbage, and small quantities of fat bacon or pork; little milk, eggs, butter, fruit, or green vegetables were consumed. The diet of the poorer industrial workers was also of a lower quality.

The wartime decline in total food supplies in Hungary was not very substantial; in fact, until 1942 it was insignificant. However, owing to difficulties of distribution—Hungary's railroad facilities proved inadequate to handle the increased volume of traffic—it was not always easy to victual Budapest and other large towns. It should be mentioned that Budapest represented 4.2 percent, and Great Budapest 5.2 percent, of the total population of Great Hungary in 1910, and 11.6 and 16.4 percent respectively of the population of

the Trianon territory in 1930. In 1941 the population of Budapest represented 12.4 percent of the total population of Trianon Hungary, and that of Great Budapest 18.4 percent. This created a very difficult task from the point of view of food supply, especially during the wartime period and under the siege of Budapest which lasted some 4 months. *At least until the beginning of 1943* the rural population for the most part fared as well as before the war; in fact, many of the poorer peasants probably were able to afford a better diet because, being able to dispose of foodstuffs at black-market prices, they did not have to sell so much of their output to cover essential expenses. For townspeople food consumption was increasingly restricted. A substantial quantity of food was sold on the black market, but as prices were well above official levels this source was virtually closed to all but the well to do. This situation was somewhat alleviated by the fact that skilled workers, and also laborers, earned much more in the war industries than before the war.

Efforts were made to increase food deliveries by raising officially the prices of agricultural products, on the average by one-third (20–50 percent); representative wheat prices were raised from 30 to 40 pengö per 100 kilograms as compared with a price of 20 pengö before the war. Hopes were expressed that these prices would remain unchanged, and that these higher prices would increase deliveries by farmers. However, they were not fulfilled since the farmers' confidence in the national currency was shaken. State subsidies prevented the full rise in prices from being passed to the consumer. The cost of food in 1943 was some 65 percent above prewar, as compared with 85 percent for wholesale prices. Nevertheless, as mentioned before, for some sectors of the population high prices undoubtedly limited consumption of certain foods. There was some compensation for this in the fact that the price of bread was reduced in August 1942. Supplies of grain for human consumption were maintained at the expense of feed use. The first sign of a shortage of bread grains was apparent in 1940, when potato flour, and later maize flour, had to be added to bread. In 1941 rationing of bread and flour was introduced in certain towns, and this, by 1942, was extended to the whole country (excluding producers). The ration figures of July 1943 were 200 grams (7 ounces) of bread daily, in addition to 2 kilograms (4.4 pounds) of flour monthly. Meanwhile the milling rate was raised to 90 percent, an unpopular measure in a country which was wont to consume very white bread.

Sugar went under rationing in May 1940. In a country like Hun-

gary, where sugar consumption differs so markedly between town and country, it was difficult to fix suitable rations. In July 1943 the weekly ration in Budapest was 260 grams (9 ounces), while it was only half this quantity in other large towns, and in rural areas only 80 grams (less than 3 ounces).

A fair distribution of meat was also difficult. Supplies fell, partly owing to fodder shortage, partly because rural consumption increased. At first, attempts were made to control consumption by the introduction of meatless days, restriction of sales, etc., but distribution remained uneven. In January 1943 meat was rationed in Budapest and suburbs (Great Budapest) at 500 grams (17½ ounces) weekly. Subsequently, rationing was extended to certain other towns, and later to the whole country. Apparently it was not possible to maintain supplies, and in July 1943 the fixed ration was suspended and distribution made according to available supplies.

It was even more difficult to provide the urban population with a reasonable allowance of fats. Lard is normally the main source of fat in Hungary, but after the beginning of war not only was there a sharp fall in output (owing to fodder shortage), but also rural consumption increased. First rationed early in 1940, the normal consumers' allowance of fats in Budapest and certain other industrial towns fell from 240 grams (8½ ounces) to 140 grams (5 ounces) weekly; but apparently this ration was not always available. Later, compulsory deliveries of fats were introduced with the view of improving supplies for urban areas, but without much success.

Milk was also rationed in Budapest, distribution being confined to children up to 14 years, expectant and nursing mothers, and sick and old people.

In order to secure the food requirements for industrial workers engaged in important industries, higher rations were introduced for them on a graduated scale according to the heaviness of the work. This arrangement was in effect until the end of the war, and later a similar system was adopted by the postwar regime.

The number of decrees regulating problems of supply was very great, and frequent changes were characteristic for them.

PRICES AND AGRICULTURAL CONTROL

Until the outbreak of hostilities in Europe, there was a great discrepancy between agricultural and industrial prices, which constituted a chronic phenomenon of Trianon Hungary's prewar economy. At the bottom of the depression Hungary, like most other

countries, experienced a sharp fall in prices. Wholesale prices and the cost of living reached their lowest levels in 1933 and 1934 respectively. The wholesale index of agricultural products had declined by that time to about half its 1929 level, whereas the price of industrial materials had decreased only 29 percent by 1932. From 1935 to 1937 prices rose steadily, but in the next two years they remained relatively stable, the cost of living even dropping slightly in 1939. In September 1939 the price index (1929 = 100) for agricultural products was 75.8 and for industrial products 91.6, while the wholesale-price index was 86.5. After the outbreak of war, however, the rise again became marked and prices exceeded predepression levels.

The price "scissors," namely the gap between the levels of agricultural and industrial prices which originated from the depression's years, remained dangerously wide. Therefore the government deemed it in the interest of the country to raise the level of agricultural prices. In order not only to maintain but also, if possible, to increase the farmers' output and to close the price "scissors," the Hungarian Commissioner for Price Control at first permitted food prices to rise above the minimum prices fixed by the government at their level of August 26, 1939, when price control and price freezing covering most commodities and sources were introduced. Wages of the lower-paid employees and industrial workers were raised, while prices of industrial products were kept down. In the summer of 1941 the system of price freezing, which applied to some agricultural staple commodities, was extended to all farm products. The price control was relatively successful; however, the rigid price freezing of August 26, 1939 was soon to a great extent superseded by other methods of control.

In the fall of 1941 the German-Hungarian agreement—which was renewed in subsequent years and applied also to the Netherlands, Norway, and Slovakia, fixing the price relations in foreign trade between these countries—worked likewise toward a stabilization of the prevailing price structure. The "dividend-freezing" of early 1942 established a standard dividend of 4 percent for corporations. In the middle of 1942 the prices of agricultural products were 85 percent higher than on August 26, 1939; and prices of industrial products had gone up 65 percent, while the wholesale-price index had risen 79 percent. Thus the agrarian price lag not only disappeared, but farmers, as in most European countries, enjoyed a relatively better position than before the war.

On the whole, prices remained fairly stable from December 1941 to the spring of 1943. By the middle of 1943 the cost-of-living index had increased 67 percent (53 percent including rent) above the prewar level as compared with an increase of 65 percent in wages actually paid. At that time, however, it became evident that existing economic controls were not sufficient to hold prices at the desired levels against the pressure of an increasing purchasing power in the hands of the consumers. In an attempt to put an end to piecemeal price advances and to black markets, the government decided on a system of fairly large general price increases. This decision was carried out by the following measures: prices of agricultural products were increased by 20–50 percent, of industrial finished products by 30–40 percent, and wages and salaries by 15–25 percent; higher taxes and official fees were introduced; and postal and railroad rates were increased.

Later developments showed that these price increases gave undesirable results, and that the policy was wrong. Remembering very well the events and consequences of the inflation after World War I, people lost their confidence in the pengö. In the autumn of 1943 the flight to tangible goods became more accentuated, and when, at the turn of 1943, the government attempted to sell securities in the open market it had to offer "fixed value" wheat debentures which were subscribable and redeemable in pengö, the price of wheat being used as an index for evaluating the currency.

In the middle of 1943 three main types of price control were employed:

1. For goods the demand for which was relatively constant and the supply assured, producers', wholesale, and retail prices were fixed.

2. For goods the quantity and quality of which were likely to alter, gross-profit margins were fixed, the merchant himself fixing the actual prices within the profit margins allowed.

3. For goods which had not yet been fitted into either of the above schemes the price freezing of August 26, 1939 still held good.

State control, though more effective than in Rumania and Yugoslavia, was not able to prevent a very substantial rise in prices.

The marked increase of cereal prices effective after the harvest of 1943 made the prices of cereals more than double those current in 1939. These changes of policy and prices were partly designed to help rectify the balance between crop and livestock prices. Hitherto

it had paid farmers to feed grain to livestock and sell livestock products, even at official prices—not to mention the black-market possibilities—rather than to deliver up their surplus grain to the authorities.

In order to solve one of the major problems of the administration—that of securing deliveries of grain and livestock sufficient for the needs of the rest of the population—compulsory surrender of all bread grain (other than that needed for seed and the producer's own family consumption) and a fixed percentage of other grain was decreed. Moreover, delivery premiums were granted over and above the controlled price. Also, the compulsory surrender was reinforced by official supervision of threshing. But even these methods proved unavailing.

A new method, more successful, yet not fully so, was introduced according to the plans of the Undersecretary of the Food Ministry, Béla Jurcsek. This was the so-called "points system." The farmers' delivery obligations were assessed on the gold-crown value of their land as shown by the cadastral valuation made for purposes of the land tax during the second half of the nineteenth century. For each gold crown of value, 50 units (points) of wheat had to be surrendered to the authorities at the official prices. One wheat unit was one kilo of wheat or its equivalent, the equivalents of the various farm products being given in an official list which was divided into three sections: (*a*) for bread grain; (*b*) for fats, oils, and fat-yielding livestock; and (*c*) for all other agricultural produce. Ten of the 50 wheat units were to be provided from (*a*) and 10 from (*b*), while the composition of the remaining 30 units was left to choice.

The method was worked out on the basis of normal agricultural yields; in the case of bread grain, for example, it would appear that the calculated deliveries should yield the quantity sold off farms in normal years. By this method the authorities sought to assure the minimum quantities of bread grain, fats, and other foodstuffs for the urban population, and not without success. There was the very important problem, with which the new scheme tried to cope, of controlling effectively the many small agricultural producers. Of course, the system met with much criticism. It was accused, among other things, of favoring the large estate owner at the expense of the small peasant. Moreover, it was hinted that one of the purposes of the scheme was in fact to force the small peasants to seek part-time jobs on the large estates, thereby easing the labor shortage. It was generally known by this time that because peasants were able

to dispose of at least a part of their produce at black-market prices, they were not obliged to seek work as casual laborers so frequently as before. On the other hand, at this time, in the summer of 1943, the loss of civilian manpower through military mobilization was approximately 450,000, of which number some 100,000 were killed, wounded, and taken prisoner on the Russian front.

Another cause of labor shortage in certain parts of Hungary was the migration of agricultural laborers from Hungary to Austria and Germany in the months of March to November, which became common especially after 1936. After 1940 the annual number of such agricultural migrant workers in Germany was estimated at about 25,000.

MARKETING ORGANIZATIONS

After the beginning of hostilities in Europe the control over the delivery of agricultural products became important. This was vested in a number of separate organizations, with their headquarters in Budapest and branch offices throughout the country.

Some of these central organizations were started before the war for the support of certain branches of agriculture, but they soon became the "bosses" of the subsidized farmers and gained very effective control over them. The slogan was to help the farmers through marketing organizations. It is true that these organizations helped them, but they also put them under control from the point of view of quantity and quality of production and of marketing, the latter being channeled by such organizations in a monopolistic way. The aims of the marketing organizations were as follows: (1) to prevent overproduction in the respective cultivation branch; (2) to secure capital for the producer; (3) to secure proper quality of products; (4) to secure adequate prices; (5) to act as a central monopolistic marketing organization; (6) to handle all kinds of problems affecting the respective branch of agriculture; (7) to adjust exports from the point of view of foreign exchange policy followed by the government, and direct production accordingly.

The policy pursued by these agricultural organizations was usually indicated and directed from above, from the government agencies, and their autonomy decreased as the war progressed. Notwithstanding, it must be stated that these organizations accomplished a good deal for the benefit of their respective farmer members and helped notably in the development of the Hungarian agriculture. Nothing was more natural than to use—besides the many new con-

trolling agencies—the existing organizations for the state control of production and deliveries. The old ones offered the farmers a chance to exercise some autonomy and self-control, which tended to make the system more acceptable to them.[2]

The co-operative movement in Hungary was not an integral part of the rural economy as in the Scandinavian countries and the Netherlands, nor even as in Bulgaria. This was not surprising, seeing that the bulk of grain and livestock exports was furnished by the large estates, peasants' farms having only small surpluses. When at the end of the nineteenth century the co-operative movement in Hungary got an effective impetus through the influential agitations of Count Sándor Károlyi, and laws concerning central co-operative organizations were enacted by the Parliament, the whole movement received a strongly centralized character. Thus in general the co-operative movement in Hungary had always been imposed from above.

Before World War II the central organizations of the Hungarian co-operative movement maintained contact with the obligatorily affiliated co-operatives and supervised, and in many cases even directed, their operations, permitting them little free action. The two most important central co-operative organizations—both established in 1898—were:

1. The *OKH*—abbreviation of Országos Központi Hitelszövetkezet (National Central Credit Co-operative)—with a stock of some 1,600 affiliated local co-operatives, in which 25 percent of the agricultural population participated. The OKH was also concerned with carrying out certain government measures connected with the agrarian reforms. Its activities were extended to the reannexed areas during the period from 1938 to 1944.

2. The *Hangya* (Central Association of Consumers' Co-operatives), similar in its activities to the OKH. In 1937 the Hangya included 1,540 consumers' co-operatives with 660,000 individual members, 90 percent of whom were peasants. During the 1930's it took up the marketing of agricultural produce. The Hangya extended its activity over co-operatives in the reannexed territory, the overwhelming majority of which had been affiliated to it before and during World War I. An exception was the consumers' co-operatives in the reannexed Felvidék (Upper Region) where the co-opera-

[2] The list of the most important producers' and marketing organizations of Hungarian agriculture is given in the Appendix.

tive organization of the Magyar minority in Czechoslovakia, the *Hanza*, kept its independence.

FOOD INDUSTRIES[3]

Before World War I in Great Hungary the food-processing industries were of paramount importance for the country, providing some 40 percent of the gross value of its total industrial production. There were two bases for the development of these industries: (1) the volume of agricultural production, and (2) the uniform consumers' markets which supplied some 51,000,000 inhabitants living within the frontiers of the Austro-Hungarian Monarchy.

After World War I in Trianon Hungary the bulk of the food industries remaining in this territory faced a very serious situation. The former economic unit was broken up into seven pieces and, consequently, not only were there custom duties to be met with, but also hostile political developments which prevented the entry of Hungarian foodstuffs into their former established markets. Crisis and difficulties were the result of this situation.

When the crisis was partly overcome there still remained foodstuff-processing capacity far in excess of domestic requirements and actual export possibilities, though great efforts were made to replace the lost markets. In consequence, many concerns were obliged to close down; yet even with this reduction in the number of producing firms the Hungarian food industry never again worked to full capacity.

During World War II, owing to general circumstances and changes in production, the extent of this excess capacity of the Hungarian food-processing industries was still larger (see Appendix Table XI, p. 227).

Flour milling is the principal Hungarian food industry, and Budapest is one of the largest flour-milling centers of Europe. In 1937 there were some 650 flour mills of factory size in Hungary and total production amounted to 1,540,000 tons of flour, of which 50,000 tons were exported. At the outbreak of World War II a strong demand for foodstuffs in Western Europe temporarily raised the production of flour in Hungary; however, limitations of supplies of wheat were soon felt, and in January 1940 it was found necessary to curtail production of the finer grades of flour. Later, as supplies became still shorter, there were various changes in the rates of flour extraction; in August 1943 this was 85 percent as contrasted with

[3] Data relative to food industries from 7; 8, p. 126; 9, p. 164.

75 percent before the war. During this time part of the grain from the Bachka was milled in Budapest before being exported, most of it to Italy, the rest to Germany. Both before and during the war there was a considerable excess of flour-milling capacity.

The capacity of the Hungarian sugar mills was also in excess of the requirements. One of the 13 sugar mills in Trianon Hungary was permanently out of use between the two wars. The number of mills and the sugar production (in metric tons) were as follows:

Year and territory	Number of mills	Production
Trianon Hungary		
1935/36	12	143,700
Enlarged Hungary		
1942/43	19	165,713
1943/44	19	165,890
Postwar (Trianon) Hungary		
1945/46	9	5,904
1946/47	12	68,505
1947/48	12	140,900
1948/49	12	220,000
1949/50	12	265,000

The canning industry was not adequately developed in spite of the domestic supply of raw materials to be canned. Canned food never achieved popularity among Hungarian housewives. With the increase of the export of canned food there was some development of the industry. The war requirements offered vast possibilities, but inadequate supplies of fruits and vegetables and, principally, the very serious shortage of tin plate put an end to such hopes. Another difficulty with which the Hungarian canning industry had to struggle was the lack of sufficient working capital at the time when the bulk of vegetable crops was offered at the market, especially after the war. The method of deep-freezing was introduced after the war and met with considerable success.

The salami, bacon, and ham-packing industries also suffered much under the wartime shortages.

Tobacco has been a state monopoly in Hungary since the middle of the nineteenth century. Before and during the war tobacco manufacture was carried out in 11 factories in Trianon Hungary, and in 14 in Enlarged Hungary. More than three-quarters of the output was pipe and cigarette tobacco, and less than one-quarter in the form

of cigarettes. Of the tobacco processed, 18,079 metric tons were domestic and 3,941 foreign in 1943, and 2,868 domestic and 185 foreign in 1946. The equipment of the tobacco factories was not up to date.

The alcohol distilleries had a constant overproduction in Trianon Hungary, as a result of both the contraction of the markets and of competition between agricultural and industrial alcohol distilleries. In 1936, therefore, a state alcohol monopoly was established which bought out the big industrial concerns and limited production. The number of agricultural distilleries, mostly located on the large estates, was 259 in the territory of Trianon Hungary, and 351 in the same territory plus Felvidék and Kárpátalja together.

In 1938/39 nearly half of the total alcohol consumption—197,845 hectoliters out of 406,608—was used for automotive fuel. A mixed fuel named "Motalko" containing a high percentage of alcohol was made obligatory for use in automobiles.

During the war both the alcohol industry and the breweries operated at reduced capacity, owing to the shortage of supplies. For the same reason the alcohol content of beer was reduced. Breweries numbered 10 in Trianon Hungary, and 17 in Enlarged Hungary. The latter produced 1,163,364 hectoliters in 1942/43 and 1,340,871 in 1943/44.

FOREIGN TRADE IN AGRICULTURAL PRODUCTS

Hungary was an exporter of agricultural products as far back as medieval times. Hungarian beef and wheat were to be found in the markets in the Holy Roman Empire for the German nation and in Italy. In the second half of the nineteenth century and up to World War I Hungary was the second greatest exporter of wheat in Europe, Russia holding first place.

After World War I, with the loss not only of two-thirds of her own territory but also of free access to markets in other parts of the former Austro-Hungarian Empire—which meant a reduction of her immediate consumer potential from 51,000,000 to 7,900,000—Hungary faced a serious problem of marketing.

Hungarian exports of cereals have always been considerable, and many products obtained by mixed farming were also on the lists. In the 1920's, however, the foreign-trade balance showed an alarming deficit of some hundreds of million pengö, the result of powerful competition from overseas grain exporters as well as the worldwide agricultural overproduction relative to the purchasing power of the

peoples. By 1929 imports and exports almost matched in value and in 1930 the country was again in a net-export position, though the total turnover was at a lower level. At this time the Hungarian foreign trade (in million pengö) was as follows (*9*, p. 183):

Year	Imports	Exports
1928	1,211.4	826.0
1929	1,063.7	1,083.5
1930	823.3	911.7

The passive trade balance induced the Hungarian Minister of Agriculture to found the Export Institute of Hungarian Agricultural Products. This institute was later merged with another new agency, the Hungarian Royal Foreign Trade Office. The most important duty of this institute was that of studying foreign markets, to reconquer lost ones and to find new possibilities. Furthermore, the agricultural production had to be directed and reorganized with a view to export. As a result of such activities, in general, Hungarian agriculture was making a strenuous effort to adapt production to modern requirements and the producers were gradually adopting commercial principles. All of this helped Hungary to maintain and strengthen her position on the world markets between the two world wars.

Before World War II Hungary was primarily an importer of capital goods and raw materials, and an exporter of consumers' products, chiefly agricultural items. The following tabulation gives the values of exports of broad groups of agricultural commodities, and their share in the total value of Hungarian exports:

Commodity	1929		1938		1939		1940	
	Million pengö	Percent	Million pengö	Percent	Million pengö	Percent	Million pengö	Percent
Foodstuffs and feed	520.2	50.0	223	42.6	290	48.0	215	42.8
Live animals	160	15.4	66	12.7	103	17.2	91	18.0
Other agricultural products	...	...	34	6.5	33	5.4	21	4.2

Hungary was dependent to an overwhelming extent on Europe as a market for her exports. Germany and Austria took 42 percent, Italy 11 percent, the United Kingdom 8 percent, and Switzerland and Rumania between 4 and 5 percent each.

Germany was Hungary's most important trading partner in imports as well as exports, supplying and taking between 25 and 30 percent; Austria was second, accounting for up to 20 percent of

each. After World War II the Soviet Union became the leading partner in Hungary's foreign trade, and Czechoslovakia second.

During World War II Hungary's trade was virtually confined to Axis and neutral countries in Europe. The following tabulation shows the percentage shares of the most important countries in Hungary's combined import and export trade:

Country	1941	1942	1943
Germany	59.9	53.5	57.0
Italy	17.5	22.0	14.8
Switzerland	5.6	4.2	5.0
Protectorate (Bohemia and Moravia)	3.5	3.7	3.5
Slovakia	2.6	3.1	3.6
Turkey	2.4	3.5	4.0
Sweden	2.1	2.4	2.4
Bulgaria	1.4	1.7	2.0
Belgium	—	1.0	1.5
Finland	—	—	1.2

For strategic reasons no detailed data on exports and imports by commodities in the war period were published. Such data are still not available by commodities and countries combined. However Appendix Tables XII and XIII (pp. 227–28) give an idea of Hungary's wartime trade.

During World War II Hungary's foreign trade increased considerably in value but not in volume. In 1939 wheat exports rose to over 10,000,000 quintals from the normal average figure of 4,500,000, and at the same time exports of wheat flour were almost double the tonnage of the preceding year. The reannexations should have increased exporting possibilities; however, on the whole, this was not the case. The principal wheat-producing territory was the reannexed Bachka, whose entire surplus of agricultural produce—in accord with an agreement forced upon Hungary—went to Germany and Italy. For 1942 this was estimated to be more than 2,000,000 quintals of grain, in addition to appreciable numbers of livestock. During the war mixed Hungarian-German and Hungarian-Italian government committees were formed to further the mutual exchange of goods. Trade with the Axis-occupied countries was covered by multilateral clearing agreements handled by the central clearing offices in Berlin or Rome, respectively. Trade agreements, often containing a price-freezing clause, were made for a fixed period (6–12 months), each country undertaking to deliver to the other a certain

determined quantity of goods during the period agreed upon. This series of agreements implemented the planned control of trade. During the war, agreements on these lines were concluded with Belgium, Bulgaria, Croatia, Denmark, Finland, Holland, Italy, Norway, Portugal, Slovakia, Sweden, and Switzerland. Exports of agricultural products tended to match up with destinations as follows:

Agricultural products in general	Croatia, Slovakia
Foodstuffs in general	Belgium, Finland, Germany, Holland, Norway, Sweden, Switzerland
Grain	Italy
Livestock	Bulgaria
Herbs	Denmark, Holland
Hemp	Denmark
Seeds	Holland, Portugal, Turkey

The gradual extension of wartime controls to all phases of the distribution and consumption of goods resulted in a central organization of domestic and foreign trade in monopoly trading bodies, operating under government control. Both private and public bodies, frequently working on a co-operative basis, were licensed for that purpose. By the end of 1942 the balance of Hungary's favor in the German-Hungarian clearing amounted to 1 billion reichsmarks. At this point the Hungarian government refused to accept further payment in reichsmarks. Finally, an agreement was reached according to which Germany made payments through the sale of German-owned Hungarian securities, and took over Hungarian state debts to the Netherlands, Czechoslovakia, and Yugoslavia. Trade relations with Germany were marked mainly by three factors:

1. Germany's virtual control of Hungary's foreign trade, and the use of its influence to commandeer the flow of goods even against Hungary's will.
2. Germany's inability to ship to Hungary the types and quantities of goods required, although Germany had promised to do so (especially to supply certain amounts of raw materials).
3. The clearing agreement forced upon Hungary, which enabled Germany to obtain from Hungary larger deliveries than she gave, but offered Hungary no prospect of liquidating the accumulated reichsmark balance.

Trade with Italy was also based on a complicated clearing system. The Allied invasion of that country disrupted this and at the

same time forced a search for new markets for shipments which had been ordered but could not be delivered on account of the uncertainty of the situation.

The closer the war in Europe drew to an end, the more Hungary's trade with Italy and Germany became disappointing for Hungary. The occupation of Hungary by the German army on March 19, 1944 brought an entirely new situation, in which Hungary was at the mercy of the occupier from the point of view of the use of her agricultural resources.

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CHAPTER 4

POSITION OF AGRICULTURE IN THE NATIONAL ECONOMY

NATIONAL WEALTH AND AGRICULTURE

Hungary's national wealth has been evaluated by various experts and organizations of research. Table 20, consisting of data supplied by the Central Statistical Office of Hungary, comprises estimates of national wealth in 1944, and of the war losses suffered by the various property categories. In evaluating the latter, it should be borne in mind that losses in land were negligible and that losses were smaller in buildings and installations than in movable property. Losses in farm buildings were only 2.9 percent, while loss of farm products accounted for 78 percent of the total damage to agriculture.

TABLE 20.—HUNGARIAN NATIONAL WEALTH AND LOSSES DUE TO WAR, 1944/45*

(Million pengö, 1938 value)

Item	National wealth	War losses	Losses as percent of national wealth
Total national wealth.....	54,590	21,951	40.2
Agriculture	17,212	3,683	21.4
Mining and smelting.....	1,802	65	3.6
Manufacturing industry..	3,774	2,042	54.1
Communications	6,256	3,690	59.0
Dwellings	10,298	1,854	18.0
Handicrafts	15,278	940	69.6
Commerce		1,375[a]	
Finance and insurance...		987	
Private households.....		5,248[a]	
Cultural institutions		407	
Others		1,670	

* Data on national wealth supplied by the Central Statistical Office of Hungary as compiled by A. Farkasfalvy; data on war losses supplied by the Central Statistical Office of Hungary as compiled by J. Szigeti; both from National Bank of Hungary, Econ. Res. Dept., comp., *Hungary in Statistical Tables* (Budapest, 1947), p. 32.

[a] Excluding damage to buildings.

NATIONAL INCOME AND AGRICULTURE

Since the character of the Hungarian economy was agrarian between the two world wars, the greatest contribution to the formation of the national income of Hungary was that of agriculture. However, during the world economic crisis of the 1930's, with the fall of prices of agricultural products the proportion which agriculture contributed to the national income in current prices declined, though the physical volume of the agricultural contribution, i.e., its value calculated at constant prices, remained almost the same (Table 21).

TABLE 21.—CONTRIBUTION OF AGRICULTURE TO THE NATIONAL INCOME (INCLUDING VALUE OF HOUSEHOLD WORK)*

(*Percent*)

Year	Basis nominal value (value at current prices)	Basis physical volume (value at constant prices)
1929/30	36.4	37.1
1930/31	34.3	38.4
1931/32	32.0	39.6
1932/33	28.8	38.1
1933/34	27.7	37.9
1934/35	29.8	36.7
1935/36	31.8	34.9
1936/37	33.8	34.7
1937/38	33.5	34.6

* Data from Magyar Gazdaságkutató Intézet 15. számú különkiadványa, *A magyar nemzetgazdaság fejlödésére vonatkozó adatok, 1924/25–1937/38* [Hungarian Inst. Econ. Res., Special Pub. 15, *Data Relative to the Development of the Hungarian Economy, 1924/25–1937/38*] (Budapest, 1938), pp. 9–10.

The national income of Enlarged Hungary was composed somewhat differently from that of Trianon Hungary owing to the fact that the proportion of the agricultural population of Trianon Hungary was 51.8 percent, and that of Enlarged Hungary 57.5 percent. Of course, this increased percentage of the agricultural population resulted in an increased percentage of agricultural contribution to the national income (Table 22). Another fact to bear in mind in reviewing Enlarged Hungary's national income is that a very rich agricultural region, the Délvidék, with the best soils, was returned to Hungary.

During the war Trianon Hungary's national income (at current prices) took a sharp upturn, reaching 15,431 million pengö in

TABLE 22.—NATIONAL INCOME OF HUNGARY FOR 1941/42 (ACCOUNTING YEAR), AT CURRENT PRICES*

Sectors of production	Enlarged Hungary		Trianon Hungary	
	(*billion pengö*)	(*percent*)	(*billion pengö*)	(*percent*)
Total national income	10.5	100	7.6	100
Agriculture	4.3	41	2.7	35.5
Industry	2.1	20	1.9	25
Mining	.2	2	.2	3
Handicrafts	.9	9	.6	8
Commerce	.8	8	.6	8
Others	2.2	21	1.6	21

* Data of the Hungarian Institute for Economic Research.

1943/44, to which agriculture contributed 4,230 million pengö, or 27.5 percent (*1*, p. 371). By comparison, in 1938/39 agriculture's contribution to the total income of 5,192 million pengö was 1,745 million, or 33.7 percent. The increase in the value of total income was almost entirely the result of inflation; in agricultural production inflation made an increase out of a real decline, as shown by the values in Table 23 calculated on the basis of 1938/39 prices. Whole-

TABLE 23.—NATIONAL INCOME OF TRIANON HUNGARY AT CONSTANT (1938/39) PRICES, FOR 1938/39, 1943/44, 1945/46, AND 1946/47*

Year	Total national income		Contributions of agriculture		
	(*million pengö*)	(*index numbers*)	(*million pengö*)	(*index numbers*)	(*percent of total*)
1938/39	5,192	100.0	1,745	100.0	33.7
1943/44	5,214	100.4	1,321	75.4	25.4
1945/46	2,541	48.9	755	43.3	29.7
1946/47	3,137	60.4	928	53.2	29.6

* Data of the Hungarian Institute for Economic Research from National Bank of Hungary, Econ. Res. Dept., comp., *Hungary in Statistical Tables* (Budapest, 1947), p. 33.

sale prices of farm products were about 228 percent higher in the calendar year 1944 than in 1939 (*2*, p. 173).

The trend of the postwar developments, directed by the Communist-dominated government, is an energetic industrialization of the country. The Three-Year and Five-Year plans foster this aim with every possible means. The mechanization of agriculture and all its branches is also one of the goals to be achieved according to these plans.

In spite of any trend toward a forced industrialization, Hungary's agriculture will continue to play an important role in the Hungarian economic life because of its natural position and possibilities.

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APPENDIX NOTES

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List of Marketing Organizations Engaged in State Control of Production and Deliveries of Agricultural Products in Hungary During World War II

1. Wheat:
   a) *Futura*, a central organization set up in 1919 by the central cooperative associations in the form of a limited liability company for the sale of grain and wool, though its activities were extended to cover other kinds of agricultural produce. One of its main objects was to open up markets abroad, and it controlled all exports of grain and flour.
   b) *Hombár* (Granary), a state grain-buying organization, which had charge of the delivery of cereals during the war. Formerly this organization was included in Futura, but during the war it was separated from it.

2. Potatoes:
   a) *Mezögazdasági Termelök Egyesült Szövetkezete* (United Co-operatives of Agricultural Producers), which controlled and directed all activities of the two commercial marketing bodies, the
   b) *Belföldi Burgonyakereskedelmi Egyesülés* (Domestic Commercial Association for Potatoes), and
   c) *Magyar Burgonyakiviteli Egyesülés* (Hungarian Potato Export Association).

3. Fruits and vegetables:
   a) Credit actions organized by the *Pénzintézeti Központ* (Central Corporation of Banking Institutes, a controlling body of banks, etc.) for subsidizing exporters.
   b) Obligatory control of exports executed by government agencies.
   c) *Magyar Gyümölcskiviteli Egyesülés* (Hungarian Fruit Export Association).
   d) *Gyümölcskiviteli Szövetkezet* (Fruit Export Co-operative), established by Hangya (see p. 205) with the support of the Ministry of Agriculture and of the Hungarian Royal Foreign Trade Office.

4. Wine:
   a) A great number of winegrowers' co-operatives.
   b) A great number of credit co-operatives.
   c) *Hangya.*
   d) *Magyar Mezögazdák Szövetkezete* (Hungarian Farmers' Co-operative).
   e) *Magyar Szölösgazdák Országos Borèrtékesitö Szövetkezete* (National Co-operative for Wine Marketing of the Hungarian Winegrowers).
   f) *"MEGA" Magyar Hegyvidéki Bortermelök Értékesitö Szövetkezete* ("MEGA" Marketing Co-operative of the Hungarian Winegrowers of the Mountainous Regions), established by the Magyar Mezögazdák Szövetkezete and Hangya, and controlled by the Hungarian government.

5. Onions and garlic:
   a) *Mezögazdasági Termelök Egyesült Szövetkezete* (United Co-operative of Agricultural Producers).

6. Seeds:
   a) *"Sator" Mag-és Terményértékesitö Rt.* ("Sator" Seed and Produce Marketing Company), established in 1936, by Futura and its business friends abroad.
   b) *Magyar Vetömagkiviteli Rt.* (Hungarian Seeds Export Company), established on the initiative of the Hungarian Royal Foreign Trade Office in 1939.
   c) *Magyar Hüvelyes-és-Olajosmagkiviteli Egyesülés* (Hungarian Pulse and Oilseeds Export Association), established on the initiative of the Hungarian Royal Foreign Trade Office in 1939.

7. Camomile:
   a) *Hangya* (see p. 205), a monopolistic commission for 3 years.
   b) *"Cooperativa" Magyar Kamilla Kiviteli Iroda* ("Cooperativa" Hungarian Camomile Export Office), established within the cadre of the Marketing Division of Hangya.

8. Beef and pork:
   a) *Magyar Mezögadzák Szövetkezete* (Hungarian Farmers' Co-operative).
   b) *Hangya.*
   c) *OKH* (see p. 205) granted loans for fattening.
   d) *Magyar Állat és Állati Iermékek Kiviteli Szövetkezete* (Hungarian Co-operative for Export of Animals and Animal Products), established by the Hungarian Royal Foreign Trade Office, Hangya, and the Magyar Mezögazdák Szövetkezete.

9. Milk and milk products (only butter was exported in significant quantity):
   a) *OMTK*, abbr. of Országos Magyar Tejszövetkezeti Központ (National Hungarian Central of Dairy Co-operatives), which exported butter produced by its member co-operatives and in its own plants.
   b) *Butyril*, a co-operative export organization established by private dairy companies (those not organized in the co-operative system).

10. Eggs, poultry, game:
   a) *Tojás és Baromfi Kiviteli Egyesülés* (Egg and Poultry Export Association), established on the initiative of the Hungarian Royal Foreign Trade Office.
   b) *Hangya.*
   c) *Libamájellenörzö Iroda* (Control Bureau for Goose Liver), established in 1939.
   d) *Löttvad Kiviteli Egyesülés* (Killed-Game Export Association).
   e) *Magyar Löttvadkiviteli Szövetkezet* (Hungarian Co-operative for Killed-Game Export), established by Hangya.

11. Wool:
   a) *Futura* (see above, p. 217).

12. Feathers:
   a) *Hangya.*
   b) *Magyar Tollkiviteli Egyesülés* (Hungarian Association for Feather Export).

13. Horses:
   a) *Lóértékesitö Szövetkezet* (Horse-Marketing Co-operative).
   b) *M. Kir. Külkereskedelmi Hivatal* (Hungarian Royal Foreign Trade Office).
   c) *Lókiviteli Szakbizottság* (Expert Committee for Export of Horses).
   d) *Árkiegyenlitö Alap* (Price Equalization Fund).

APPENDIX TABLES

TABLE I.—HARVESTED AREA OF PRINCIPAL CROPS IN TRIANON HUNGARY, 1936–47*
(*Thousand hectares*)

Crop	Average 1936–40	Average 1941–43	1945	1946	1947
Wheat	1,557	1,431	735	1,092	1,318
Rye	611	542	369	454	547
Barley	449	424	520	464	420
Oats	227	240	211	203	199
Maize	1,165	1,057	1,221	1,160	1,248
Potatoes	285	264	302	257	266
Sugar beets	47	49	17	54	92
Fodder beets	141	139	117	122	112
Tobacco	13	14	8	14	17
Rapeseed	7	9	4	1	1
Sunflower seed	7	46	132	177	130
Alfalfa (lucerne)	222	192	222	189	216
Red clover	116	155	169	110	45
Purple clover	34	25	19	20	13
Sainfoin	34	32	33	27	19
Vetch	128	146	134	138	134
Panicum	26	32	22	22	35
Maize sown thickly for fodder	75	67	59	73	69
Dry peas	31	62	46	24	20
Dry beans	4	6	7	6	6
Lentils	11	3	2	2	3

* Data from Hungary, Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Zsebkönyv, 1948* [*Hungarian Statistical Pocketbook . . .*] (1948), pp. 110–11.

TABLE II.—PRODUCTION OF PRINCIPAL CROPS IN TRIANON HUNGARY, 1936–47*

(Thousand metric tons)

Crop	Average 1936–40	Average 1941–43	1945	1946	1947
Wheat	2,310	1,956	658	1,127	1,152
Rye	699	581	304	424	489
Barley	628	606	442	441	399
Oats	297	323	171	198	167
Maize	2,515	1,499	1,871	1,364	1,781
Potatoes	2,310	1,915	1,691	1,143	1,061
Sugar beets	1,038	790	178	516	1,159
Fodder beets	3,470	2,473	1,637	1,358	1,244
Tobacco	18	16	8	13	16
Rapeseed	7	8	2	[a]	[a]
Sunflower seed	8	43	100	135	109
Alfalfa (lucerne)	1,030	725	718	553	553
Red clover	438	485	439	237	92
Purple clover	94	64	40	35	24
Sainfoin	103	92	72	64	40
Vetch	385	432	298	308	288
Panicum	78	78	49	52	70
Maize sown thickly for fodder	2,050	1,462	884	1,253	875
Dry peas	39	78	28	17	14
Dry beans	4	6	5	4	5
Lentils	7	3	1	1	2

* Data from Hungary, Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Zsebkönyv, 1948* [*Hungarian Statistical Pocketbook . . .*] (1948), pp. 112–13.

[a] 500 tons.

TABLE III.—PHYSICAL YIELD OF PRINCIPAL CROPS IN TRIANON HUNGARY, 1921–47*

(Quintals per hectare)

Crop	1921–25	1926–30	1931–35	1936–40	1941–43	1945	1946	1947
Wheat	12.0	13.9	13.0	14.8	13.7	9.0	10.3	8.7
Rye	10.6	11.3	11.5	11.5	10.8	8.2	9.4	8.9
Barley	10.9	13.9	13.4	14.1	14.2	8.5	9.6	9.6
Oats	10.4	13.0	12.2	13.0	13.6	8.2	9.7	8.3
Maize	15.1	15.1	16.3	21.5	14.2	15.3	11.8	14.2
Potatoes	59.9	70.4	57.9	81.0	72.6	56.0	44.5	39.8
Sugar beets	183.0	212.9	192.0	222.8	161.4	116.8	95.9	125.5
Fodder beets	169.2	220.5	201.4	246.4	178.3	140.1	111.4	111.2
Tobacco	9.7	13.0	14.1	13.2	11.6	9.7	9.4	9.7
Rapeseed	8.0	8.7	8.0	9.6	8.3	6.3	5.7	5.9
Sunflower seed	7.5	7.6	8.5	10.4	9.2	7.5	7.6	8.3
Alfalfa	32.8	33.9	34.1	46.4	37.9	32.3	29.2	25.5
Red clover	27.1	29.9	28.0	37.9	31.3	26.1	21.5	20.7
Purple clover	25.0	26.1	23.1	27.6	26.1	20.9	18.1	19.1
Sainfoin	22.9	27.1	24.2	30.4	29.0	21.7	23.5	21.0
Vetch	25.0	28.0	23.3	30.1	29.7	22.2	22.4	21.7
Panicum	24.0	26.6	24.7	30.4	24.8	22.4	24.2	20.2
Maize sown thickly for fodder	189.1	234.2	216.3	273.7	219.1	149.4	172.0	126.2
Dry peas	9.2	10.9	10.8	12.9	12.5	6.3	7.3	7.3
Dry beans	7.8	8.5	8.3	9.6	9.6	7.3	6.8	7.6
Lentils	7.0	7.5	6.1	6.3	7.5	5.7	5.9	5.7

* Data from Hungary, Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Zsebkönyv, 1948* [*Hungarian Statistical Pocketbook . . .*] (1948), pp. 114–15.

TABLE IV.—HARVESTED AREA OF VARIOUS CROPS IN ENLARGED HUNGARY, 1939–43*
(Thousand hectares)

Crop	1939	1940	1941	1942	1943
Wheat	1,872	1,640	2,180	2,240	2,434
Rye	695	630	681	671	687
Barley	534	501	591	594	627
Oats	256	313	467	450	442
Millet	6	28	48	38	13
Peas	35	34	51	87	98
Beans	4	5	8	9	10
Lentils	9	6	7	5	4
Soybeans	3	5	9	16	47
Maize	1,260	1,284	1,906	1,802	1,590
Potatoes	310	343	418	403	382
Sugar beets	52	69	78	76	91
Fodder beets	162	158	169	175	167
Melons	18	16	16	16	18
Fodder pumpkins	6	7	6	7	9
Broomcorn	3	4	6	4	6
Rape	11	4	11	11	9
Tobacco	16	12	16	17	20
Hemp for seed	2	2	4	5	7
Hemp for fiber	13	14	54	52	59
Flax for seed	8	8	10	29	40
Flax for fiber	4	5	7	11	13
Castor beans	2	2	6	6	11
Poppy seed	11	9	14	10	11
Sunflower seed	8	15	35	100	160
Paprika for spice	7	8	9	7	9
Maize sown thickly for fodder	78	84	87	78	85
Vetch	159	162	194	232	231
Clovers	197	171	276	288	321
Alfalfa (lucerne)	253	239	260	240	249
Sainfoin	38	37	36	35	39
Panicum	28	40	52	58	43
Other fodders	42	46	51	53	55
Cabbage	7	8	11	14	13
Tomatoes	6	7	8	10	7
Onions	5	6	6	6	9
Other vegetables	19	18	22	27	25
Other products	33	33	47	56	52
Total	6,172	5,973	7,857	7,938	8,093

* Data from Hungary, Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Évkönyv, 1948* [*Hungarian Statistical Yearbook . . .*] (1948), p. 80.

TABLE V.—PRODUCTION OF VARIOUS CROPS IN ENLARGED HUNGARY, 1939–43, AND YIELD PER HECTARE IN 1943*

(Thousand metric tons; quintals per hectare)

Crop	1939	1940	1941	1942	1943	Yield 1943
Wheat	3,078	2,100	3,034	2,602	3,570	14.7
Rye	864	692	697	631	828	12.1
Barley	790	679	843	745	1,015	16.2
Oats	366	396	536	505	601	13.6
Millet	6	31	40	30	10	8.2
Peas	44	46	73	100	122	12.5
Beans	4	5	8	8	9	9.4
Lentils	5	4	5	4	4	8.5
Soybeans	3	6	9	16	30	6.3
Maize	2,334	2,619	3,038	2,212	2,073	13.0
Potatoes	2,293	2,922	3,044	2,745	2,757	72.1
Sugar beets	1,160	1,572	1,556	1,212	1,327	146.1
Fodder beets	3,976	4,008	3,601	2,999	2,486	149.2
Melons	205	154	162	180	171	92.3
Fodder pumpkin	155	172	145	166	151	165.9
Broomcorn seed	6	7	8	5	8	13.1
Broomcorn barb	4	5	6	4	6	9.4
Rapeseed	11	3	10	9	8	8.4
Tobacco	20	13	16	22	24	11.6
Hempseed[a]	1	1	3	4	6	6.1[b]
Hemp for fiber (stalks)[a]	72	67	330	246	309	49.3[b]
Flaxseed[a]	9	10	12	27	32	6.3[b]
Flax for fiber (stalks)[a]	23	28	31	64	74	22.8[b]
Castor beans	2	2	4	5	8	7.2
Poppy seed	7	5	8	6	6	5.6
Sunflower seed	9	15	24	104	169	10.6
Paprika for spice	7	6	8	6	4	4.8
Maize sown thickly for fodder	2,200	2,356	2,208	1,726	1,738	193.4
Vetch	545	547	632	670	628	27.2
Clovers	676	648	1,048	864	806	25.1
Alfalfa (lucerne)	1,138	1,128	1,210	892	769	30.8
Sainfoin	119	126	117	96	103	26.6
Panicum	81	126	152	150	106	24.6
Other fodders	270	322	264	806	186	33.9
Cabbage	104	132	155	177	148	115.6
Tomatoes	77	74	79	113	52	69.8
Onions	50	49	56	47	100	107.8

* Data from Hungary, Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Évkönyv, 1948* [*Hungarian Statistical Yearbook . . .*] (1948), p. 80.

[a] Combined production from seed and fiber areas (see Appendix Table IV).

[b] Yield from area devoted to indicated product. "By-product" yields (i.e., of seed from the "fiber" area, and of stalks from the "seed" area were: hempseed, .2 q., hemp stalks, 26.2 q.; flaxseed, 5.1 q., flax stalks, 11.5 q.

TABLE VI.—COMPOSITION OF TRIANON HUNGARY'S LIVESTOCK ACCORDING TO SEX AND AGE*

(Thousand head)

Kind	Feb. 28, 1942	May 31, 1945	May 31, 1946
Cattle	2,376.5	1,069.9	1,100.3
Brood sires	15.9	7.5	8.5
Draught oxen	211.9	109.2	112.8
Cows	1,014.5	585.7	603.8
Fattening and outsorted	27.8	3.9	2.6
Calves, over six months	870.2	232.4	220.8
Calves, under six months	236.2	131.2	151.8
Horses	900.5	329.0	398.7
Brood stallions	6.0	1.2	3.2
Over three years	665.5	223.6	279.0
Under three years	229.0	104.2	116.5
Asses and mules	6.7	4.0	4.9
Over two years	5.5	3.4	4.2
Under two years	1.2	.6	.7
Pigs	4,669.9	1,113.5	1,327.0
Brood boars	25.3	7.6	9.0
Brood sows	612.8	213.6	296.1
Fattening	414.1	19.9	53.6
Young pigs, over four months	1,738.5	409.2	421.1
Porklings, under four months	1,879.2	463.2	547.2
Sheep	1,708.5	328.5	369.7
Over one year	1,211.7	218.1	234.1
Under one year	496.8	110.4	135.6
Goats	70.9	57.6	87.7
Over one year	55.9	41.1	56.9
Under one year	15.0	16.5	30.8

* Data from Hungary, Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Zsebkönyv, 1948* [*Hungarian Statistical Pocketbook . . .*] (1948), p. 130.

TABLE VII.—COMPOSITION OF HUNGARIAN LIVESTOCK BY BREEDS, OCTOBER 1947*

Breed	Number	Percent
Cattle:		
Hungarian breed	137,719	9.56
Hungarian dappled	1,222,232	77.90
Roan	12,840	.89
Others	167,886	11.65
Horses:		
Hungarian half-blood	154,136	33.20
Nonius	59,440	12.00
Other warm-blooded	166,431	35.83
Cool-blooded	84,391	18.17
Sheep:		
Short-fleece	412,327	84.43
Long-fleece	76,060	15.57
Pigs:		
Fat pigs (mangalica)	1,425,896	67.29
Porkers	693,131	32.71

* Data of the census of Oct. 15, 1947, from Hungary, Magyar Központi Statisztikai Hivatal, *Gazdaságstatisztikai Tájékoztató* [*Economic Statistical Bulletin*] (1949), III.

TABLE VIII.—ESTIMATES OF ANNUAL AVERAGE MILK YIELD PER COW AND TOTAL MILK PRODUCTION IN HUNGARY, 1924/25 TO 1949

Sources of estimates	Date	Yield per cow (*liters*)	Total production (*million hectoliters*)
Trianon Hungary:			
Dr. Sándor Konkoly Thege, Secretary General of National Hungarian Agricultural Society (OMGE)	1924/25	1,500	No Estimates
	1925/26	1,600	
	1926/27	1,700	
	1927/28	1,750	
	1928/29	1,800	
	1929/30	1,800	
	1930/31	1,750	
	1931/32	1,700	
	1932/33	1,750	
	1933/34	1,750	
	1934/35	1,750	
In 521 controlled dairy farms with 19,867 cows	1928	3,226	
Dr. Jenö Ébner, Secretary of the National Chamber of Agriculture	1930	1,577	
	1931	1,672	
Estimate on the basis of nationwide trial milking, May 1	1931	1,830	16.6
Árpád Ujlaki Nagy, agricultural economist	Interwar	1,570	14.0
Hungarian Central Statistical Office	1930	1,845	16.6
	1937	1,611	14.5
Market and Price Research Department of the Municipal Statistical Bureau of Budapest	1937	1,849	16.6
Enlarged Hungary:			
Hungarian Ministry of Agriculture	1941	1,500	24.0
Árpád Ujlaki Nagy	1942	1,483	27.0
Postwar Trianon Hungary:			
Food and Agriculture Organization	Prewar	1,840	15.3
	1946	—	7.1
	1947	1,220	7.4
	1948	1,400	8.9
	1949	—	11.0

TABLE IX.—WEIGHT OF POULTRY STOCK OF TRIANON HUNGARY, ANNUAL AVERAGES, INTERWAR PERIOD*

Kind	Weight (*metric tons*)			Average weight per piece (*grams*)	
	Minimum	Maximum	Average	Minimum[a]	Maximum[b]
Chickens	32,000	52,000	42,000	900	2,300[c]
Geese	13,000	34,000	24,500	1,800	5,600
Ducks	4,500	13,000	9,000	1,900	3,200
Turkeys	2,500	7,500	4,800	2,750	7,100
Pigeons	500	800	700	400	600
Total	52,500	107,300	81,500	1,900[d]	2,300[d]

* Data from Árpád Ujlaki Nagy, *Élelmiszertermelésünk és ellátásunk* [*Our Production and Supply of Food*] (Budapest, 1943), p. 328.

[a] April.

[b] February.

[c] January.

[d] Annual average.

TABLE X.—APICULTURE IN HUNGARY*

Year	Number of beekeepers (*1,000*)	Beehives (*1,000*)	Production (*metric tons*)	
			Honey	Beeswax
1935	37.9	357	1,508	358
1936	41.5	401	3,065	553
1937	43.4	401	3,080	479
1941[a]	65.2	625	2,139	710
1942[a]	71.5	647	2,731	771
1944	39.1	394	2,622	499
1945	28.5	209	943	203

* Data from Hungary, Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Zsebkönyv, 1948* (1948), p. 128; *Magyar Statisztikai Évkönyv, 1948* (1948); and Árpád Ujlaki Nagy, *Élelmiszertermelésünk és ellátásunk* (Budapest, 1943), p. 333. Data for Trianon Hungary except as noted.

[a] Enlarged Hungary.

TABLE XI.—FOOD-PROCESSING INDUSTRIES IN TRIANON HUNGARY, 1943*

Branch	Number of plants	Capital invested (*1,000 pengös*)	Number of working places physically available	Average number of all employees	Value of products (*1,000 pengös*)
Flour milling	601	100,524	10,803	9,907	601,067
Spice milling	14	1,824	531	249	3,725
Baking and potato stamping	56	4,812	2,298	1,541	38,986
Noodle processing	22	4,078	2,083	1,102	16,350
Sugar milling	13	123,231	8,923	5,054	83,525
Pastry	9	2,251	760	497	8,221
Candy	35	9,804	5,636	3,026	55,249
Cocoa and chocolate	8	7,616	3,170	1,359	31,666
Coffee, canned coffee	8	12,371	1,252	1,402	46,535
Vegetable canning	65	29,716	13,530	8,484	166,351
Seed selecting	15	3,033	1,788	1,085	34,990
Butchering	33	5,271	3,306	2,196	124,871
Salami	4	1,441	1,760	166	3,907
Other meat and fat	6	930	2,060	573	28,024
Meat canning	8	1,184	795	371	25,774
Fish canning	3	253	450	152	3,430
Dairy	50	12,920	2,120	2,164	126,987
Tobacco	11	33,802	5,942	5,444	479,233
Beer brewing and malt	10	45,673	5,357	4,870	82,048
Distilleries and yeast	8	17,039	730	862	20,771
Vinegar	8	2,096	49	71	2,988
Brandy	32	11,201	1,990	1,588	156,479
Champagne	5	1,787	300	178	6,864
Mineral water	13	3,740	715	485	6,241
Soda water	13	2,349	278	198	3,309
Public water supply	30	106,118	1,231	2,457	29,056
Private water supply	8	6,985	46	60	1,541
Ice	71	12,526	658	590	5,463
Total for Trianon Hungary	1,159	564,575	78,561	56,131	2,193,651
Total for Enlarged Hungary	*1,572*	*739,606*	*102,284*	*71,772*	*2,872,074*

* Data from Hungary, Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Évkönyv, 1948* [*Hungarian Statistical Yearbook . . .*] (1948), pp. 142–43. Comparative figures for Trianon Hungary in 1945 are: number of plants, 1,384; number of working places physically available, 66,261; average number of all employees, 24,789; in 1946, these same categories were 1,364, 69,588, and 30,836, respectively.

TABLE XII.—HUNGARIAN IMPORTS OF AGRICULTURAL COMMODITIES, SELECTED YEARS, 1938–46*

(*Thousand quintals*)

Commodity	1938	1943	1945	1946
Sugar	—	—	—	56
Southern fruits	256	142	—	2
Oilseeds	136	16	—	—
Live animals	—	—	—	580
Undressed leather	158	16	—	10
Wool, combed and uncombed	17	7	—	11
Cotton, crude	267	49	7	121
Tobacco, uncured	16	43	—	4
Timber, round and sawn	9,294	1,779	42	486

* Data of the Central Statistical Office of Hungary, in Natl. Bank of Hungary, Econ. Res. Dept., comp., *Hungary in Statistical Tables* (Budapest, 1947), p. 18.

TABLE XIII.—HUNGARIAN EXPORTS OF PRINCIPAL AGRICULTURAL COMMODITIES, 1938 AND 1942–46

(Thousand quintals, except for live animals)

Commodity	1938[a]	1942[b]	1943[b]	1944[b]	1945[a]	1946[a]
Live animals (*1,000 head*)	284[c]	187	142	56	—	—
Poultry, live and killed	252	99	43	9	—	19
Fresh and preserved meat	71	...	2[a]	...	—	1
Canned meat	23	31	41	22	—	1
Bacon and fats	185	...	—[a]	...	—	—
Butter	35	...	—[a]	...	—	—
Eggs	141	61	38	12	—	10
Wheat	4,361	237	1,445	550	1	—
Rye	600	...	48[a]	...	2	1
Wheat and rye flour	352	916	604	627	—	—
Maize	1,201	881	593	246	2	101
Malt	303	47	—	56	—	22
Legumes	359	593	586	530	—	48
Oilseeds	155	142	436	41	1	4
Vetch	63	91	20	28	—	28
Clover and lucerne seed	120	83	44	61	—	9
Vegetable and flower seed	11	7	16	19	—	3
Fresh fruit	309	420	359	155	—	41
Canned fruit	...	15	37	121	...	...
Processed fruit	...	287	265	106	...	...
Fruit pulp	2	31	34	11	4	74
Fresh vegetables	322	332	181	171	—	1
Canned vegetables	...	120	22	8	...	...
Dried vegetables	...	66	131	80	...	...
Tomato juice	78	...	30[a]	...	—	10
Soup preparations	...	21	14	13	...	...
Sugar	50	...	32[a]	...	—	1
Wine	403	...	195[a]	...	—	124
Medicinal plants	26	...	31[a]	...	—	2
Tobacco	68	79	80	41	—	—
Timber, round and sawn	259	...	2,081[a]	...	—	47
Hemp and tow	82	262	212	174	—	—
Feathers	26	34	16	9	—	7

Dots (...) indicate commodity not listed in source; dash (—) indicates figure not given in source: presumably no export.

[a] Data of the Hungarian Central Statistical Office from Natl. Bank of Hungary, Econ. Res. Dept., comp., *Hungary in Statistical Tables* (Budapest, 1947), pp. 18–20; exception noted in 1938.

[b] Data from Hungary, Magyar Központi Statisztikai Hivatal, *Magyar Statisztikai Évkönyv, 1948* [*Hungarian Statistical Yearbook . . .*] (1948); exceptions noted in 1943.

[c] Cattle and pigs, from Int. Inst. of Agr., *International Yearbook of Agricultural Statistics 1940–41* (Rome, 1941).

AGRICULTURE AND FOOD IN RUMANIA DURING WORLD WAR II

By

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On the basis of material supplied by a Rumanian expert
(Edited by P. STANLEY KING)

INTRODUCTION

POLITICAL HISTORY

Shortly after World War I, Rumania became virtually a new and much enlarged state. Provinces with a Rumanian majority in former Austria-Hungary and Russia took advantage of the principles expressed in Woodrow Wilson's historic Fourteen Points, whereby the self-determination of the people became—for a moment in history—international law.

The Rumanians of Bessarabia first decided, at the town of Chişinău in 1917, to unite their land with the rest of the Rumanian nation. During 1918, Bukovina, at a National Assembly held in Cernăuţi, followed the example of Bessarabia. Toward the end of that year, on December 1, Rumanians from Transylvania, Banat, and Crişana held a National Assembly in Alba Iulia, and by unanimous vote decided to unite with all other Rumanian provinces to form a united Rumania. Some of the ethnic minority groups also followed these larger groups and joined with the Rumanians. In a very short time the country became a new political, social, and economic unit.

The population of the country was heterogeneous because more than half of the various peoples of the newly created country had been under foreign domination for many years and had lived under the laws of different countries.

Bessarabia had been under the domination of Tsarist Russia since 1812—the northern part uninterruptedly; the southern part was returned to Rumania in 1856 after the Crimean War, and again taken by Russia after the Russo-Turkish War of 1877–78. The period of 105 years of Russian domination, which used a centralized system of administration, imposed upon this province the whole system of Russian legislation.

Bukovina, which was part of the Moldavian Principality, was taken by Austria in 1775 and remained under Hapsburg rule for almost 145 years.

Transylvania, Banat, and Crişana, the Western provinces of Rumania, which for centuries belonged to Hungary (i.e., also to the Hapsburg Empire), had had the same way of life as the rest of Hungary.

These foreign rulers created stable social and economic condi-

tions which differed greatly from one area to another. When in 1918 all Rumanian provinces reunited, it was difficult to harmonize conditions throughout the country. Not only were the systems of legislation very different, but the levels of living varied considerably. The most striking contrast was found between the provinces of the East, recently released from Russian rule, and those of the West, which had been under Austrian and Hungarian domination. However, in the new state the people were allowed to use their own initiative to solve local problems according to local necessities. This rule was also applied to the field of the agrarian reforms.

AGRARIAN REFORMS

In the Old Kingdom, which consisted of two principalities, Moldavia and Tara Romanesca (Muntenia, Wallachia), the people united into a single country during the reign of Alexander Cuza in 1864. Land conditions during the centuries, though not identical, were very similar in these two provinces. The boyars, though they did not actually own the land, exploited it by controlling the labor of the peasants.

Only in 1831 in Moldavia, and in 1832 in Wallachia, was the question of ownership of land raised, and this by the "Regulamental Organic," a sort of constitution imposed by force by the occupying military power of Russia, which at that time held both principalities under her protectorate.

There was an enormous difference between the agrarian conditions of the principalities and the feudal system of the rest of Europe during the centuries. Whereas the decisive factor in the feudal system in other parts of Europe was the ownership of the land, this was of secondary importance in the principalities because of their peasant character (peasants were the sole owners of the land from the beginning). Ultimately, the control of manpower created similar and sometimes worse economic and social conditions than in feudalistic countries. However, the landownership consciousness of the people never died out, and there were impressive fights between the two social classes—peasants and boyars—for the ownership of the land.

A turning point in the life of the peasant was reached during the reign of Alexander Cuza. In 1864 he abolished altogether the obligatory work of the peasant and carried through considerable redistribution of land. Subsequent reforms in the field of agriculture

were constantly being made, and in 1919 the expropriation act, the most radical agrarian reform in the people's history, placed virtually all of the land in the hands of the peasants.

By 1930, the distribution of land in farms in all provinces was as follows (*1*, pp. 403–05; *2*, p. 304):

Size of farms	Number of farms		Land in farms	
	Thousands	Percent	Thousand hectares	Percent
Total	3,280	100.0	19,750	100.0
Under 5 hectares	2,460	74.9	5,535	28.0
5–10	560	17.1	3,955	20.0
10–20	180	5.5	2,360	12.0
20–50	55	1.7	1,535	7.8
50–100	12.8	0.4	895	4.5
100–500	9.5	0.3	2,095	10.6
500–and over	2.7	0.1	3,375	17.1

In addition to cropland these figures include all forests and pasture land owned by private persons and corporations, excluding public ownership (state, county, communal, or church properties). The proportion of forests and pasture land increased with the size of farms.

The agrarian reform placed an upper limit of 500 hectares on the amount of agricultural land that could be owned by one person.

In 1930 the total *arable* surface of the land was 12,857,000 hectares while the total surface owned predominantly by peasants with less than 50-hectares ownership was 13,385,000.

In Bessarabia the agrarian reform was very radical. It was administered chiefly by the local government; the Parliament merely approved the already fulfilled reform and the administration intervened only when conflicting cases arose. In the whole of the former Russian province of Bessarabia after its return to Rumania there were practically no big estates left.

In Transylvania the agrarian reform was made by the provincial Parliament of the Transylvanians which existed in 1919 and 1920. This reform was almost as radical as that of Bessarabia. Some big estates survived in Transylvania only because the province has very extensive forests, and the expropriation of land was strictly obligatory only in so far as the cultivated agricultural land was concerned.

These facts tend to explain why in 1945 the Communist govern-

ment could find little scope for "agrarian reform" in the way of a radical and new expropriation of the land belonging to the big landlords. Still, for propaganda purposes, the Communists instituted a new agrarian reform which, though confiscatory, was much more limited in extent than the reforms of 1919. Most of the *confiscated* land in the Communist reform came from two sources: (1) the land of the German peasants, and (2) small properties of different categories such as those of war criminals and absentees, land not cultivated by the owners, land in the mountains, and land from all properties larger than 50 hectares, the great majority of which were under 150 hectares.

These categories of landownership provided more than two-thirds of the total surface confiscated by the government in 1945, and less than one-third came from land properties owned by the landlords. It is also important that the agrarian reform made by the Communists meant the confiscation of a total agricultural surface of over 1,400,000 hectares, which is about 6 percent of the total surface of the country, and about 10 percent of the agricultural land in 1945.

About the Communist "agrarian reform" we have authentic and official information given in an official publication by the Government of the People's Republic of Rumania, and distributed by its Washington legation in 1948. In this booklet (*3*) the following data are given:

> By virtue of the agrarian reform law of 22nd March 1945, over 1,400,000 hectares of land were expropriated and handed over to the toiling peasantry. Of this area, 1,040,000 hectares were handed over to more than 900,000 peasants without land or with little land. The remainder was kept by the state as a reserve. It was the purpose of agrarian reform to return the land to the peasants, and to assure a more decent standard of living to the toiling peasantry.

Some interesting comments can be made on these figures. These are:

1. In total, over 1,400,000 hectares of land were "expropriated." Not only was the land confiscated, but all the farm buildings, animals, machinery, and all personal belongings of the former proprietors. They were deprived of their houses and all their belongings not related to the exploitation of the land, such as clothing, furniture, books, family pictures, kitchen utensils, handiwork made by their wives and daughters, not to mention other valuable items such as gardens, mills, or any kind of nonagricultural enterprise. If a

family had holdings or apartments in several locations, all were included in the confiscation at the same moment, the members of the family being obliged to leave their houses immediately, without taking even such bare personal necessities as clothing, shoes, or linens. These people were not only deprived of all their possessions, but were deported to distant places where they had no relatives or friends, no place to live, and no employment of any kind by which to earn a living. The "expropriation" of land in reality was a perfect scheme to exterminate all landowners—first the bigger ones, later the smaller ones.

2. The 1,400,000 hectares were not "arable land" only, but included forests and uncultivated land.

3. Out of this, 1,040,000 hectares were handed over to 900,000 peasants. This is an average of about 1.11 hectares for one family of peasants who had no land, or had very little land. The remaining 360,000 hectares (25.7 percent) were kept by the state as a reserve.

The Communist booklet says in a note that the agrarian reform carried out in 1918–21 was "only a farce." It appears useful to compare the results. On the agrarian reform of the democratic political parties compared with the Communist reform, the official booklet gives us the following figures:

	Expropriated land (*hectares*)	Beneficiaries (*number of families*)	Hectares per family	Hectares obtained by beneficiaries
1918–21 land reform ...	6,125,789	1,478,663	2.34	3,464,082
1945 Communist land reform	1,400,000	Over 900,000	1.16	1,040,000

In 1930 the small landholders, predominantly peasants, owned 13,385,000 hectares, to which the Communist "agrarian reform" added 1,040,000 hectares, thus increasing the surface owned predominantly by the peasantry by 7.7 percent. The agrarian reform of 1918–21 increased the land of the peasant smallholders by 36.9 percent.

The Communist booklet gives the "accepted" figure of 6,125,789 hectares of expropriated land by the agrarian reform in 1918–21. This figure is taken from a study by I. C. Vasiliu published by the *Enciclopedia Românei* (2, p. 305). The booklet adds that from this surface "by 1934, the peasants were granted only just about half of that area, while the remainder, 2,721,707 hectares, continued to be in the hands of big landed property."

In the same table from which the figure of 6,125,789 hectares was taken, the distribution of this area is given by Vasiliu, as follows:

	Hectares	Percent
Expropriated area by 1934	6,125,789	100.0
Distributed to the peasants directly, as grazing land, for housing (within village limits), temporarily rented and used for colonization	4,888,380	79.8
State reservation: forests, *embatics* (land in long-term lease), unproductive land, reservations for state farms, roads, railroads, etc.	1,220,042	19.9
Sold by the government to unspecified persons or corporations	17,367	.3

From these figures, we can clearly see that 79.8 percent of the 6,125,789 hectares of expropriated land had been handed over to the peasants, while the "agrarian reform" of 1945 had handed over 74.3 percent of 1,400,000 hectares of the expropriated land.

The redistribution of farmland undertaken in 1945 was less important than that carried out in the frame of the agrarian reform of 1918–21 not only in quantitative respect but also qualitatively: it does not even deserve to be called an "agrarian reform." The application of the Law of March 22, 1945 had hardly started when in July 1949 the National Assembly ratified a decree giving the state the right to expropriate land for the purpose of creating state farms. During 1949 also the first co-operatives for joint field operations were organized by the government. Thus—overshadowed by the collectivization drive—the redistribution of land lost its meaning. A new, rather sad, era for Rumanian peasantry began.

CITATIONS

1 See Rumania, Institutul Central de Statistică, *Anuarul Statistic al României, 1937–1938* (1939).

2 I. C. Vasiliu, "Structura Economica a Agriculturii Romanesti," *Enciclopedia României*, Vol. III (Imprim. Natl., Bucharest, 1939).

3 Rumania, *Aspects of the Peasant Problem in the Romanian People's Republic* (Bucharest, 1948; distributed by Washington legation).

CHAPTER 1

AGRICULTURE

SOILS AND CLIMATE

Light brown steppe soil is to be found near the Black Sea, in Dobruja and near the Danube. Black chernozem occupies most of the plain in the east and some of the Western Plain. The hills and mountains, including the Transylvanian Plateau, are covered with podzol. It occupies 39 percent of the surface of the country. Finally, in the southwestern region we find red-brown soil, occupying 13 percent of the surface of the land.

The climate is continental, with cold winters, short springs, and hot summers. There is a great range between the country's recorded minimum and maximum temperatures: from —35.6° to 42.8° C., or —32° to 109° F. In general there are fewer than 50 days with temperatures below freezing. The eastern and northern provinces are the coldest.

Summer is usually the rainiest season. Drought is quite common in some regions on the plains, eminently in southern Bessarabia.

Two principal air movements dominate the atmosphere of Rumania. The *crivatz*, a cold, northeast winter wind that sweeps in from the Russian steppes, often reaches a velocity of 50 miles per hour, and lowers temperatures rapidly by as much as 15–20 degrees. From the opposite direction (southwest) comes the *austrul*, a very dry summer wind of high velocity.

The character of the winds has a definite influence upon the climate, exaggerating the latitudinal differences between northern and southern Rumania. Cereals and fruits ripen two weeks earlier in the south than in the north.

REGIONAL CHARACTERISTICS OF AGRICULTURE

As the agrogeological and agrogeographical conditions are decisive for the study of the Rumanian agriculture, the Rumanian statistics, prior to 1941, divided the country systematically into the following zones, generally considered homogeneous in those respects:

Plain of Siret and Prut. Districts: Dorohoi, Botoşani, Iaşi, Roman, Vaslui, Falciu, Tutova, Covurlui, Tecuci, Râmnicul-Sarat.

Moldavian Carpathians. Districts: Baia, Neamţ, Bacau, Putna.

Carpathians of Muntenia and Oltenia. Districts: Buzau, Prahova, Dambovița, Muscel, Argeş, Valcea, Gorj, Mehedinţi.

Plain of the Danube. Districts: Dolj, Romanaţi, Teleorman, Vlașca, Ilfov, Ialomița, Braila.

Dobruja. Districts: Tulcea, Constanța, Caliacra, Durostor.

Northern Bessarabia. Districts: Hotin, Soroca, Orhei, Lapuşna.

Southern Bessarabia. Districts: Tighina, Cahul, Cetatea Alba, Ismail.

Bukovina. Districts: Cernăuţi, Storojinet, Campulung, Radauţi, Suceava.

Transylvanian Plateau. Districts: Mureş, Odorhei, Ciuc, Trei Scaune, Braşov, Fagaraş, Sibiu, Tarnava Mare, Tarnava Mica, Alba, Hunedoara, Turda, Cluj, Someş, Nasaud, Maramureş.

Plain of the Tisa. Districts: Satu-Mare, Salaj, Bihor, Arad, Timiş Torontal, Caraş, Severin.

The first five regions, namely Plain of Siret and Prut, Moldavian Carpathians, Carpathians of Muntenia and Oltenia, Plain of the Danube, and Dobruja, form what is called the *Old Kingdom*, meaning the state territory before World War I. The regions Transylvanian Plateau and Plain of the Tisa are very often referred to under the general name of *Transylvania.* This is also the sense in which the terms "Old Kingdom" and "Transylvania" are used in parts of the following analysis.

In 1936 in all of Rumania there were 18,359,000 hectares of agricultural land, i.e., arable land, vineyards, orchards, permanent meadows and pastures, representing 62 percent of the total surface of the country. The rest was occupied by forests (6,448,000 hectares, 22 percent) and unproductive land, i.e., rivers, lakes, roads, etc. (4,697,000 hectares, 16 percent).

With respect to the use of the land the agrogeographic regions differ considerably. This can be seen from Table 1 in which the regions specified above are combined in larger units—provinces or groups of provinces.

In Bessarabia 82 percent of the land was agriculturally exploited, as contrasted with the mountainous Bukovina for which the corresponding figure was only 46 percent; in the Old Kingdom 62 percent of the land was used in agriculture, as against 55 percent in Transylvania (with Banat, Crişana, and Maramureş). The ratio of arable land to agricultural land was also more favorable in

TABLE 1.—RUMANIA: LAND USE BY PROVINCES OR GROUPS OF PROVINCES, 1936*

(Thousand hectares and percent)

Land	All Rumania		Old Kingdom		Bessarabia		Bukovina		Transylvania, etc.	
	(hectares)	*(percent[a])*	*(hectares)*	*(percent[a])*	*(hectares)*	*(percent[a])*	*(hectares)*	*(percent[a])*	*(hectares)*	*(percent[a])*
Total surface	*29,505*	...	*13,790*	...	*4,442*	...	*1,044*	...	*10,228*	...
Agricultural land, total..	*18,359*	*62.2*	*8,550*	*62.0*	*3,654*	*82.3*	*485*	*46.5*	*5,670*	*55.4*
Arable land	13,940	75.9	7,048	82.4	3,146	86.1	337	69.5	3,410	60.2
Permanent meadows, pastures	3,857	21.0	1,216	14.2	374	10.2	144	29.7	2,121	37.4
Orchards, vineyards ..	561	3.1	285	3.3	134	3.7	4	.8	138	2.4
Forests	*6,449*	*21.9*	*2,517*	*18.2*	*199*	*4.5*	*449*	*43.0*	*3,282*	*32.1*

* Data from I. C. Vasiliu, "Structura Economica a Agriculturii Romanesti," *Enciclopedia României*, III (Imprim. Natl., 1939), p. 307. The absolute figures on total surface and arable land, as well as the relative figures on agricultural land as percentage of the total surface, are taken directly from this source. The remaining absolute and relative figures are derived from them and from additional relative figures published in the same source.

[a] Agricultural land and forest are expressed as percent of total surface, the other categories as percent of total agricultural land.

Bessarabia and the Old Kingdom (86 and 82 percent, respectively) than in the other provinces. The regional differences become even more apparent if the arable land is related directly to the total surface. Then one finds that in Bukovina only one-third (32 percent) was under the plow as against more than two-thirds (71 percent) in Bessarabia, the average for the provinces being 47 percent.

The use of land by broad categories may be described shortly as follows: The Old Kingdom has extensive arable land, devoted to cereal production. It also has more than the average percentage of fruit orchard land. Bessarabia is even more developed in the same direction, having consequently a very low proportion of land in pastures and forest.

On the other hand, Bukovina and Transylvania have less cereal production, much gardening and pasture, and, most of all, extensive forestry. These regional distributions of land are the key to the agricultural problems of the country.

Since World War I the cultivation of food crops other than cereals and of industrial crops has increased continuously, reaching in 1938 the following proportions in percent of arable land (*1*, pp. 416–17; see Table 1, above, for arable land by provinces):

Province	Food crops other than cereals	Industrial crops
Rumania	20.4	3.5
Old Kingdom	24.1	2.6
Bessarabia	7.2	7.1
Bukovina	35.3	19.2
Transylvania, Banat, Crişana, Maramureş	23.4	2.0

In Bukovina large areas are devoted to the culture of potatoes, which are used both as food and as an industrial raw material. In Bessarabia the sunflower is the most important representative of industrial crops.

Before World War II domestic animals were distributed as follows in relation to rural population (number of head per 100 persons; 2, p. 337):

Agrogeographical region	Horses	Cattle	Sheep	Pigs
Moldavian Plain	14	34	85	18
Moldavian Carpathians	12	29	80	16
Muntenian Carpathians	8	28	76	21
Plain of the Danube	16	29	84	17
Dobruja	30	29	166	18
Northern Bessarabia	17	22	76	20

Southern Bessarabia	26	24	119	20
Bukovina	13	32	41	17
Transylvanian Plateau	7	37	71	15
Plain of Tisa	15	30	51	30
Northern Transylvania	7	35	67	10
Average for the whole country	17	29	77	19

More animals are kept by the farmers in the plain than in the mountains. Agricultural machinery is distributed largely in the same way as the animals. It is only natural that the production and consumption of agricultural goods should be much higher in the level, rich chernozem regions than in the mountains.

A few special investigations of the peasant economy have been made by Rumanian scientists. They have examined a limited number of peasant family budgets which are considered as characteristic for the different regions (see *3*, p. 308). Table 2 contains one of the most illuminating findings.

The total average income per hectare of land is the highest in the district of Ilfov, in which Bucharest is located. The lowest average income is that of Dobruja, the region with the most deficient means of transportation and scanty rainfall.

Small cereals and maize are the most important sources of income for the peasants except in the mountains where the income from animal husbandry dominates.

TABLE 2.—THE STRUCTURE OF THE BRUTTO AVERAGE INCOME PER HECTARE OF LAND IN FARMS IN 1935*

Region	Total income	Percentage distribution by sources							
		Cattle	Pigs	Fowls	Small cereals	Maize	Industrial crops	Vegetables	Other
Muntenia and Oltenia Plain .	100	8.2	9.4	6.4	24.1	22.5	5.1	2.6	21.4
Muntenia and Oltenia hills ..	100	11.8	7.5	5.8	12.5	13.8	—	0.6	48.1
District of Ilfov..	100	6.1	7.1	2.8	23.2	17.0	—	2.3	41.5
Dobruja	100	22.9	8.1	4.7	29.0	10.9	—	0.7	23.7
Moldova	100	14.1	11.9	8.8	19.3	16.1	—	4.5	25.3
Bessarabia	100	6.9	4.6	3.0	30.0	11.2	—	1.7	42.5
Bukovina	100	21.7	19.2	7.8	17.1	9.1	8.3	0.8	16.1
Banat	100	7.9	14.9	4.4	46.4	5.8	6.3	3.7	11.2
Transylvania ...	100	18.7	15.6	5.4	31.3	5.6	0.5	0.5	22.5

* Data based on 303 family budgets, from I. C. Vasiliu, "Structura Economica a Agriculturii Romanesti," *Enciclopedia României*, III (Imprim. Natl., 1939), 317.

A comparison of the figures on average brutto income and of cost of production per hectare, by region in Rumania, reveals striking differences (see 3, pp. 317–18):

Region	Average cost of production in lei	Brutto income	Gain or loss
Plain of Muntenia and Oltenia ...	3,236	3,124	−112
Hills of Muntenia and Oltenia ...	3,760	3,995	+235
District of Ilfov	5,298	5,901	+603
Dobruja	1,545	1,146	−399
Moldova	2,066	1,835	−231
Bessarabia	2,436	2,525	+ 89
Bukovina	3,519	3,172	−347
Banat	3,057	2,786	−271
Transylvania	2,616	2,836	+220

It may seem a strange phenomenon for the majority of the peasant families to register loss instead of gain. It should be observed, however, that family labor is here evaluated in money. If we consider the autarchic family exploitation of land by the Rumanian peasants, so different from that of the American farmer who works his land for profit and considers his work on the land as an occupation, we can understand why the Rumanian peasant may operate at a "deficit" without the slightest intention of abandoning it. The peasant works on his land to obtain a livelihood, without regard to profit. If his income goes down he may adjust himself to the lower income by lowering his level of living. He can do that in his autarchic economy as he has done for centuries.

RURAL POPULATION AND MANPOWER CONDITIONS IN AGRICULTURE

The evolution of the Rumanian population was greatly influenced by historical events of the last century. The frontiers of the country changed several times. Censuses of the various Rumanian provinces were taken at different dates by the different countries in possession of those provinces, but not until 1930 was a Rumanian regime in the position to take a general census of all Rumanian territory. The following analysis, therefore, is based on the findings of this census.

The total population of Rumania in 1930 was 18,050,896; by 1938, it had grown to over 20 million (4; see also 5). As a result of World War II, Rumania lost the provinces of Bessarabia, North-

ern Bukovina, the Herta region from Dorohoi district, and Southern Dobruja. According to the latest official census (*6*), taken in January 1948, the population within the new boundaries was 15,872,624—an increase of 1,592,000 over the 1930 figure for the corresponding territory.

In 1930 the population was overwhelmingly rural—79.9 percent, as against 20.1 percent urban. At the census of 1941 (April 6), after the loss of the preponderantly agricultural territories of Bessarabia and Northern Transylvania in 1940, the proportion of the urban population was 23.6 percent. By 1948 it had decreased slightly to 23.4 percent, probably owing to the reannexation of Northern Transylvania after the war.

One outstanding characteristic of the Rumanian population is its high proportion of active population, shown by the following data (principal groups of occupation; figures refer always only to those over 13 years of age):

Occupation group	Active as percent of total in each group
Agriculture	63.1
Industry	44.3
Commerce	46.7
Transportation	35.5
Public institutions	56.0
Health, recreation	53.1
Others	44.3
Average of all groups	58.4

The "family type of agricultural exploitation" is responsible for the very high proportion of persons gainfully occupied in agriculture. This implies a large employment of women and children in agricultural work. In the rural population the proportion of persons gainfully occupied in agriculture is 90.4 percent. Table 3 gives the proportion of active population by provinces. In Dobruja, of 100 economically active people, more than 90 are engaged in agriculture. The average percentage for the country is also extremely high—78.2.

Even if we refer to the proportion of the reported total active population to the total population of the country, Rumania appears to have the highest proportion of gainfully occupied in a list of 14 European countries and the United States and Japan (see Appendix Table I, p. 280). With 58.4 percent active population, Rumania represented in 1934 the one pole of this series and the United States

TABLE 3.—ACTIVE AGRICULTURAL POPULATION IN 1930, BY PROVINCES*

Province	Total population (*thousands*)	Gainfully occupied: All (*percent of total population*)	Gainfully occupied: In agriculture (*percent of total occupied*)	Gainfully occupied: In agriculture (*percent of rural occupied*)
All Rumania	18,053	58.4	78.2	90.4
Oltenia	1,519	62.5	88.8	95.1
Muntenia	4,028	57.1	71.1	89.6
Dobruja	811	55.2	90.3	92.1
Moldavia	2,427	57.2	79.5	93.1
Bessarabia	2,863	57.6	86.8	93.4
Bukovina	854	59.2	75.6	89.7
Transylvania	3,218	58.6	77.0	87.0
Banat	942	62.2	72.3	83.8
Crişana and Maramureş	1,390	59.9	75.7	87.9

* Data from D. C. Georgescu, "Populatia in viata economică," *Enciclopedia României*, III (Imprim. Natl., 1939), 45.

the other pole (39.8 percent, 1930). Next to Rumania was the USSR (57.5 percent, 1926), followed by Bulgaria (56.2 percent, 1926).

It is also interesting to examine the proportion of the active population in different countries by sex. Thus, in Rumania around 1930, of every 100 women over 13 years of age, 52 were gainfully occupied, while in the United States, the opposite extreme, the figure was only 18 (see Appendix Table II, p. 280). As in the case of both sexes taken together, the percentage of gainfully occupied women was high also in the USSR and Bulgaria. However, the highest percentage of gainfully occupied men was to be found not in Rumania, but in England. It is clear that Rumania's leadership as to the general percentage of active population was due to the exceptionally high percentage of gainfully occupied women. Men were predominantly gainfully occupied in agriculture in the USSR, Rumania, Bulgaria, Hungary, Japan, and Italy. Concentration in industry was to be observed in Germany, England, Switzerland, and Czechoslovakia. In other countries the economically active men were more evenly distributed among the various occupational groups.

Finally, the breakdown of the active population of each sex by occupation will be also of great value for the correct evaluation of the population problem in Rumania. Data are given in Appendix Table III showing percentage shares in the totals of each sex by

country. Although these data have undoubtedly changed essentially in every country since 1930, the table still has its comparative value.

AGRICULTURAL PRODUCTION

It is impossible to give a precise account of the development of agricultural production in Rumania during World War II. After 1939 a series of great changes in the state territory of Rumania, as established at Versailles in 1919, took place and disturbed the statistical observation.

There is not a complete set of official statistical data for all years of the period 1939–45, related either to the actual state territory or to that part of prewar Rumania which, like a "torso," remained unaffected by the boundary changes (this is the territory of 1941 embracing 48 districts). Hence the analysis cannot be entirely based either on the actual, or on the "torso" territory of the country. The following tabulation gives an idea of the discrepancy between the available (Rumanian official) and the necessary statistical material:[1]

Year	Territory covered by Rumanian statistics		Actual state territory (June 30)	
	Number of districts	Area (*1,000 ha.*)	Number of districts	Area (*1,000 ha.*)
1939.....	71	29,505	71	29,505
1940.....	48	19,428	71	29,505
1941.....	48	19,428	48	19,428
1942.....	48	19,428	59	24,422
1943.....	48	19,428	59	24,422
1944.....	58	23,738	59	24,422
1945.....	58	23,738	58	23,738

The data based on the actual state territory illustrate more accurately the effect of the changes in agricultural production upon the food supply; those referring to the state territory covered by Rumanian official statistics explain better the "inherent causes" of changes in agricultural production, i.e., they are less affected by boundary changes during the war (after 1940).

It should be stated at this point that as regards food supply the territorial composition of Rumania in the years 1942–44 was more favorable than that of the prewar period. This was because Bessarabia, one of the most fertile provinces, was inside, and Transylvania,

[1] More information about the territorial changes—names of provinces, areas transferred, and dates of change—is to be found in Appendix C of the General Survey (pp. 102–04).

whose fertility was below the national average, was outside the national economy. In 1945 the situation was the reverse, for Bessarabia was then "relost" and Transylvania "regained" by Rumania. The figures on the ratio of arable land (total "cultivated area" in the language of Rumanian official statistics) to agricultural land and state territory, given in Table 4, confirm this statement.

TABLE 4.—ARABLE LAND IN RELATION TO STATE TERRITORY AND AGRICULTURAL LAND, 1939–45*

(Thousand hectares except as otherwise indicated)

Item	1939	1940	1941	1942	1943	1944	1945
Number of districts	71	71	48	59	59	59	58
State territory ...	29,505	29,505	19,428	24,422	24,422	24,422	23,738
Agricultural land	18,746	18,017	11,827	16,189	15,991	15,977	14,517
Arable land	13,388	12,659	8,363	11,843	11,631	11,607	9,773
Arable land as percent of:							
State territory	45.4	43.9	43.0	48.5	47.6	47.5	41.2
Agricultural land	71.4	70.3	70.7	73.2	72.7	72.6	67.3

* Data from Appendix Table XXI of the General Survey, p. 132.

In the actual state territory the area plowed (i.e., arable land less fallow) followed in its absolute size the boundary changes, yet as a percentage of the state territory it was rather stable, with a slight tendency to increase as long as Bessarabia remained within Rumania. This can be seen from the following tabulation (data from Table 18 of the General Survey, p. 71):

Year	Harvested area (to 1941), or sown area (after 1941)		State territory (*1,000 ha.*)
	1,000 ha.	Percent	
1939.....	12,852	43.6	29,505
1940.....	12,123	41.1	29,505
1941.....	8,067	41.5	19,428
1942.....	11,070	45.3	24,422
1943.....	11,339	46.4	24,422
1944.....	...	...	24,422
1945.....	9,111	38.4	23,738

Postwar statistics show a marked decrease of arable land within the postwar state boundaries: 8,791 thousand hectares in 1947/48

as against 9,605 thousand hectares in 1944 (in both cases figures for 58 districts; see Appendix Table XXI of the General Survey, p. 132). The same phenomenon, yet not so strong, occurred in the other Danubian countries. The composition of arable land by groups of crops changed considerably (see Table 5). The most important fact in that respect was the increase of the area under "industrial crops" and "other food crops" in the "torso" territory of the country. The percentage of these two groups, taken together, increased from 7.6 in 1940 to 12.7 in 1943. This increase took place at the expense partially of cereals for grain, partially of fallow. From 1940 to 1943 the percentage of cereals went down from 81.7 to 79.3; that of fallow, after a rise in 1943, from 4.6 to 2.8. Within the groups of cereals the area of bread cereals—wheat, rye, and corn—was more affected by the contraction than the area of the feed cereals, i.e., of barley and oats (see Appendix Table V, p. 282).

The development of the *harvest*—of all crops except fruits and vegetables—in the actual state territory of Rumania during the war can be expressed in a most general way as follows (the method of estimation is explained also in the General Survey, chapter 4, and data are taken from Table 17 in that chapter):

Period	Number of districts in each year	Food crops (energy metabolizable for man)		Bulky fodder (energy metabolizable for animals)	
		American billions of large calories	Index numbers	American billions of large calories	Index numbers
1934–38.....	71, 71, 71	40,010	100.0	16,872	100.0
1940–42.....	71, 48, 49	27,561	68.9	12,886	76.3
1943–45.....	59, 59, 58	29,513	73.8	11,440	67.8

The lower figures for energy value of both food and bulky fodder during the war, as compared with the prewar period 1934–38, are due not only to losses of state territory, but also to lower yields per hectare (see Appendix Table V, p. 282). The fact that in the Second War Triennium, 1943–45, the total energy values of food crops and of bulky fodder changed in the opposite directions is explained by the opposite developments of the yields; the yields of cereals recovered, though temporarily, in 1943 and 1944, whereas those of bulky fodder for the most part declined (see Appendix Table V and Table 7, p. 251).

It is interesting to note that the contribution of oilseeds to the food supply of the country was larger during the First War Trien-

TABLE 5.—ARABLE LAND BY GROUPS OF CROPS DURING WORLD WAR II*

Year	Districts	Total arable land (*thousand hectares*)	Cereals for grain		Other food crops		Industrial crops		Rotation meadows, other feed crops		Fallow	
			(*thousand hectares*)	(*percent of total*)	(*thousand hectares*)	(*percent of total*)	(*thousand hectares*)	(*percent of total*)	(*thousand hectares*)	(*percent of total*)	(*thousand hectares*)	(*percent of total*)
1939.....	71	13,388	11,181	83.5	480	3.6	488	3.6	702	5.3	536	4.0
1940.....	48	8,334	6,808	81.7	338	3.9	305	3.7	494	6.1	389	4.6
1941.....	48	8,363	6,631	79.3	447	5.3	504	6.0	486	5.8	295	3.6
1942.....	48	8,579[a]	6,363	75.5	560	6.6	497	5.9	449	5.3	710[a]	6.7
1943.....	48	8,367	6,636	79.3	622	7.4	441	5.3	439	5.2	229	2.8
1944.....	58	9,605	7,507	78.2	604	6.3	538	5.6	786	8.2	170	1.7
1945.....	58	9,773	7,118	72.8	564	5.8	625	6.4	710	7.3	662	6.8

* Data compiled from Internat. Inst. Agr., *International Yearbook of Agricultural Statistics, 1941–42 to 1945–46*, III (Rome, 1947), 124, 126.

[a] According to Rumania, Institutul Central de Statistică, *Statistica Agricolă a României în 1941–1944* (1947), total arable land was 8,436,000 hectares and fallow, 567,000.

nium than in the prewar period 1934–38, as the following figures show (yearly averages in thousand quintals, actual territory):

	1934–38	1940–42	1943–45
Sunflower seed	1,789	1,999	1,934
Rapeseed	420	177	112
Soybeans	420[a]	511	459
Total	2,629	2,687	2,505

Data from Appendix Table VIII of General Survey, p. 119.
[a] 1935–39 average.

The strongest factor behind the development of oilseed production described above was the extension of the area under sunflower. From 164,000 hectares in 1939 (71 districts) the harvested area of sunflower reached 275,000 hectares in 1941 in the territory of 48 districts only (data from 7, Vol. III). During the Second War Triennium in the actual territory the sowings to sunflower were not reduced, but rather further extended; yet yields per hectare were lower and the Bessarabian harvest for 1945 was lost to Rumania, so that on the whole, total output of sunflower seed was slightly smaller than in the First War Triennium.

The following tabulation shows data on grape and fruit production in the 48 districts in 1940–43 (8):

	Area (*hectares*)		Production (*1,000 hectoliters*)	
Year	Vineyards	Orchards	Grapes	Fruit
1940	238,390	185,719	...	...
1941	216,164	181,036	7,491	3,581[a]
1942	208,523	181,036	5,927	3,188[a]
1943	208,523	194,949	6,750	5,981

[a] Prunes only.

On the production of bulky fodder, i.e., of natural hay, tame hay, and root crops for fodder, during the war, Tables 6 and 7 give abundant information. However, since these tables do not relate to the actual state territory, they do not illustrate fully the fodder situation. The only important conclusion that can be drawn is that the decrease of yields per hectare was responsible for the decline of bulky-fodder supply (see tabulation on energy values, p. 247).

The Rumanian Central Statistical Institute has estimated that the money (exchange) value of the harvest of annual plants (see Appendix Table IV, p. 281) increased from 31,288 million lei, annual average for 1935–38, to 76,339 million lei, annual average for 1940–42, and 215,374 million lei in 1943. On the basis of these

TABLE 6.—AREA OF BULKY FODDER AND ITS RELATION TO ARABLE AND AGRICULTURAL LAND, 1939–45*

Land use	1939	1940	1941	1942	1943	1944	1945
Number of districts	71	48	48	48	48	58	58
				(Thousand hectares)			
Agricultural land	18,746.0	11,770.0	11,827.0	12,247.0	12,049.0	14,349.0	4,517.0
Arable land	13,387.6	8,334.0	8,363.0	8,579.0	8,367.0	9,605.0	9,773.0
Area for fodder production	2,151.9	1,510.9	1,559.7	1,518.4	1,508.1	2,211.0	2,134.7
Tame hay[a]	653.2	472.7	418.6	406.1	753.4	753.4	674.0
Root crops for fodder	42.4	19.1	19.7	30.3	32.5	28.8	31.7
Natural hay (permanent meadows)	1,456.3	1,019.1	1,074.1	1,069.6	1,069.6	1,429.0	1,429.0
				(Percent of arable land)			
Tame hay[a]	4.9	5.7	5.6	4.9	4.8	7.8	6.9
Root crops for fodder	.3	.2	.2	.4	.4	.3	.3
				(Percent of agricultural land)			
Natural hay	7.8	8.7	9.1	8.7	8.9	10.0	9.8

* Data from Internat. Inst. Agr., *International Yearbook of Agricultural Statistics, 1941–42 to 1945–46*, III (Rome, 1947), 124 ff. and Appendix Table XXI of the General Survey, p. 132.

[a] Alfalfa, clover, and other rotation meadows.

TABLE 7.—PRODUCTION AND YIELD OF BULKY FODDER, 1939–45*

Year	Production (*1,000 quintals*)			Yield per hectare (*quintals*)		
	Tame hay[a]	Natural hay	Root crops for fodder	Tame hay[a]	Natural hay	Root crops for fodder
1939.....	18,164	25,503	5,236	27.9	17.5	123.5
1940.....	11,699	15,675	2,777	24.7	14.8	145.3
1941.....	12,314	19,057	1,974	26.4	17.7	100.2
1942.....	12,188	16,533	2,489	29.1	15.6	82.3
1943.....	9,559	16,170	2,976	23.4	15.5	94.4
1944.....	17,822	...	4,648	23.7	...	161.4
1945.....	8,887	18,381	1,697	13.2	12.9	53.5

* Data from Rumania, Institutul Central de Statistică, *Statistica Agricola a României în 1941–1944* (1947), and Internat. Inst. Agr., *International Yearbook of Agricultural Statistics, 1941–42 to 1945–46*, I, III (Rome, 1947). Number of districts as in Table 6.

[a] Alfalfa, clover, and other rotation meadows.

figures and the figures on energy content given on page 247, index numbers have been computed and compared. The result is presented in the following tabulation:

Years	Index numbers of annual averages		Ratio (1) ÷ (2)
	Money value of annual plant harvest (1)	Energy value of food crop harvest (2)	
1935–38.....	100	—	1.0
1934–38.....	—	100	
1940–42.....	244	69	3.5
1943.....	688	—	9.3
1943–45.....	—	74	

The ratio of the two indices gives an idea of the rise of producers' prices of agricultural products in Rumania during the war. Any further conclusion is subject to many qualifications, because the relation of food prices per calorie and food prices per weight unit is not known, and because the indices do not relate to the same territory except in the base period. Nevertheless one might say that up to 1944 prices must have risen something like nine times above the 1934–38 level.

On area, production, and yield per hectare of agricultural products by kind see Appendix Tables V and VI, pages 282–83.

AGRICULTURAL INVENTORY

The agricultural inventory underwent important changes during World War II. Generally, both animals and machinery increased

after World War I and decreased toward the end of World War II.

Livestock.—As Table 8 shows, the number of animals on a

TABLE 8.—NUMBER OF LIVESTOCK IN 1938–39 AND 1946–47*

Year	Horses	Horned cattle	Sheep	Pigs	Fowl
			(*Thousand head*)		
1938.....	1,581	3,477	10,087	2,761	27,110
1939.....	1,460	3,558	10,264	2,520	27,324
1946.....	857	3,193	6,799	1,389	14,010
1947.....	787	2,975	7,100	1,384	11,931
			(*Percent of 1938*)		
1938.....	100.0	100.0	100.0	100.0	100.0
1939.....	92.4	102.3	100.1	91.2	100.8
1946.....	54.2	91.7	67.4	49.7	51.6
1947.....	49.0	72.3	70.4	49.9	44.0

* Data from Rumania, Institutul Central de Statistică, *Statistica Agricola a României: Animalele Domestice în Anul 1947* (1948).

constant territory (postwar, 1947, 58 districts) went down, as compared with 1938, about 40–50 percent in the case of horses, fowls, and pigs, and about 30 percent in the case of cattle and sheep. The decline is also reflected in the slaughter data in Appendix Table VII, page 284. The decreases were not chiefly attributable to increased consumption of meat by the army or commercial export of livestock and livestock products (see Appendix Table VIII). The losses of livestock occurred mostly toward the end of the war, and were due more to the bad fodder situation in 1945 and 1946, to the occupation of Rumania by Russian armed forces, and to the fulfillment of armistice obligations to the USSR (see Appendix Table IX).

Rumania is a country with a large proportion of horses. In Europe, only Lithuania and Denmark had more horses per 100 people than Rumania. To a certain extent the horses signify the highly rural character of the country, being used not only for the work in the fields but also for commercial transportation, much of which is still conducted with horse-drawn vehicles.

As to the breeds of horses, Rumania has a considerable variety. First, there is the indigenous mountain horse of old, Oriental origin, closely related to the Arab horses. The original breed was corrupted by mixture with the Mongol horses which came with the Mongol invasion of Europe. Later, the Turks introduced the Arabian horses and soon many different mixtures developed. The local mixtures

of Anglo-Arabian breeds are the commonest horses in Rumania. In western Transylvania and in the southern districts the *nonius* is preferred, while in the western mountainous regions the preferred horse is of *lipitzan* breed.

The cattle are of two different breeds. In the Old Kingdom a small, locally bred type predominates, while most of the cattle in Transylvania, Bukovina, and northern Bessarabia are of Swiss origin. In 1935 Rumania, with 22.7 head of cattle per 100 people, ranked seventeenth among the countries of Europe in this respect (data from 2, p. 335).

As for the number of sheep per 100 people, Rumania ranked fifth in Europe. Only Bulgaria, Albania, Greece, and Spain had greater proportions of sheep than Rumania. The commonest breeds are the *tzurcana*, *tzigaia*, and, to a lesser extent, the *karakul*.

The principal varieties of pigs in Rumania are the indigenous *mangalitza*, highly appreciated for its fat production and early maturity, and the York and Berk breeds with a great variety of crossings with the local type. Southern Transylvania, Bukovina, and Bessarabia favor these latter breeds, while the local *mangalitza* predominates in the Old Kingdom, the rest of Transylvania, and Banat.

Machinery.—The changes in agricultural equipment are shown in Appendix Table X, page 285. At the end of World War II the country was better equipped than before the war only in respect to tractors; all other kinds of machinery were fewer in number. This statement takes into account boundary changes; it holds also for a constant territory (1947, 58 districts).

Heavy machinery reached a peak during World War II with the steady flow of imported farm machinery from Germany. This can be seen from the following tabulation which shows imports of agricultural equipment from Germany by the Institutul National al Cooperatiei (*9*, p. 162E):

	1941	1942
Tractors	1,000	2,814
Sowing drills	4,000	1,500
Harvesters	2,000	2,230
Selectors	...	250
Threshing machines	200	250
Cultivators	10,000	30,500
Harrows	4,000	9,200
Plows	20,000	40,000
Scythes, sickles, shovels	...	450,000

AGRICULTURAL MOBILIZATION

The winter of 1942/43 saw a great increase in the withdrawals of food from Rumania's reserves. Not only did the country increase her own food consumption, as always happens during a war, but also had to send sizable quantities of foodstuffs to Germany and Italy.

On the other hand, food production had to overcome increasing difficulties. These difficulties were rooted mainly in the disturbance of economic life by the war and may be summarized in the terms inflation, disproportion between changes in prices of industrial and agricultural products, and labor shortage.

To wage the "agricultural battle" the government not only mobilized sizable funds, but set up a great propaganda machine to allay the dissatisfaction of the peasants who were more and more pressed by the war burden both in their activity in the field of agriculture—they had to work harder to produce more—and in their capacity of serving as the great human reservoir for the army.

Many measures were taken within the program of the "agricultural battle." One of them was to make free use of the National Institute of Co-operatives. This organization had the monopoly of collecting and exporting grains and livestock, and importing agricultural machinery, breeding animals, and seeds. On March 7, 1944 a new law for the creation of the Office of Exports of Cereals and Foreign Products was published. It took over practically all the power to direct and control the cereal production in Rumania.

Another practical measure taken by the government was the creation of a new executive post in practically every village—that of the "agricultural agent." The agricultural agent was charged with the fulfillment of the agricultural plan of the year, with the distribution of seeds, and with keeping a record of cultivated land and its production. He also supervised the manpower, and had to keep the government informed constantly on the events in agriculture in his village. Most of these agents had only practical training, yet they were well trained for their jobs and their activities were satisfactory.

New organizations of private or public character were established with practically dictatorial powers. One was Solagra, which had a kind of monopoly of the oilseeds in Rumania. Another was the Office of Flax, Cotton, and Hemp. All these offices were in close co-operation with German economic organizations.

For the agricultural year of 1944, the government organized a

well-publicized campaign for the sowing of 4 million hectares each of wheat and corn. Other goals were 1,200,000 hectares of rye, 700,000 hectares of millet, and 8,000–10,000 hectares of rice. The oilseed and fiber crops—flax, hemp, and cotton—were also to be increased to about 300,000 hectares. Seeds were distributed to be paid for by the farmers with seeds from their future crops. A large quantity of machinery had been imported from Germany, and Rumania possessed at the end of 1943 over 10,000 tractors.

Judging from Rumanian official statistics for 58 districts and what is generally known about the productive capacity of Bessarabia (which has to be added) and of Northern Transylvania (which has to be deducted), the target for corn must have been surpassed, and that for wheat almost reached. As regards oilseeds, however, the campaign did not have the desired results. Oilseed production was somehow reduced, mostly because the planned 60,000 hectares of rape for 1944/45 were cut to 8,500 hectares by drought. Spring rape is unreliable in Rumania. In 1943, in the actual territory of the country (including Bessarabia), 355,300 hectares were sown to oilseeds. The total yield was about 251,250 metric tons. The yearly demand for oil took about 176,000 metric tons. The surplus seed was exported mostly to Germany, though 2,600 metric tons of sunflower seed were exported to Bulgaria.

However, the most important complex of government measures concerning agriculture was the so-called Agricultural Mobilization Plan. Its task was to secure the supply of agricultural products for the urban and rural population, the factories, and the army, and to build export surpluses and reserves. The plan was under the supervision of the Ministeries of Agriculture, National Economy, and National Defense. Locally, it was directed and executed by the following authorities: District Committee for Agricultural Mobilization, Chamber of Agriculture, District Committee for Forestry, Rural District Committee, Rural Agricultural Administration (Agricultural Agents), Surveyors, Rural Police.

The Rural District Committee was a new organization which had the following functions: to organize agricultural production and the labor in agriculture in respective districts; to survey the land; to carry out the decisions of the Ministry of Agriculture as well as those of the District Committees for Agricultural Mobilization concerning the provisioning of the farmers; to assist the other authorities in carrying out their duties; to inform the government about the needs and requirements of the farmers; to assist and represent the

farmers in dealing with the military and civil authorities (also to propose to the military authorities the persons considered as "indispensables" to agriculture and to recommend them for "agricultural mobilization" and thus for exemption from military service); to assist in carrying out labor in the neighboring communities; to assure the execution of labor contracts.

During the war the manpower of the country was under the direct supervision of the Ministry of Defense. All able-bodied persons, not only those enrolled in the army, were at the disposal of this Ministry. By a decree, the government mobilized all the necessary personnel needed for every economic activity upon certain conditions described below.

All farmers and proprietors of forests had the right and were obliged to apply for their personnel to be incorporated in the Mobilization Plan. This refers to all men and women of 12 years and over—all men who had not been enlisted or who were exempt from military duty, as well as soldiers on leave.

In Rumania, as in all European countries, all able-bodied men within certain age limits were either reserve soldiers or reserve officers. That is why the act upon which the Agricultural Mobilization Plan was based went further and made provision that persons belonging to certain categories important for carrying on agricultural production could be exempted from military service to be "mobilized" for work on farms or in food-processing enterprises. Active commissioned officers in the army could not be exempted from military service for this work.

Since the act applied also to persons not subject to military service, the agricultural or, more generally, the civil mobilization meant attachment to the farm or industrial establishment with which the person was previously connected. Thus "agricultural mobilization" amounted *de facto* to immobilization of the labor force (this was true of all similar measures taken in other countries).

The categories of persons who could be exempted from military service to participate in agricultural production may be summarized as follows:

1. On farms with more than 50 hectares: (*a*) farmers operating without a manager; (*b*) managers engaged on contract if the farmer, for satisfactory reasons, is unable to carry out the work alone. In both cases there were restrictions with respect to age, military rank, and function in the army, which became less severe with the increase of the size of the agricultural enterprise. (That operators of farms

under 50 hectares are not mentioned is explained by the fact that they constituted the bulk of the army.)

2. In general, without specification of size of farms: farm hands, drivers of agricultural tractors, tractor mechanics; workers in vineyards, orchards, vegetable gardens, on farms devoted to the production of fiber plants, tobacco, rice, and in private forests, grain mills, animal-breeding farms, and oil-pressing establishments; and village artisans, and mechanics for agricultural workshops.

3. There were certain occupations for which "work mobilization" could be obtained during the agricultural season, namely: producers of sugar beets and rubber plants; fishermen, field guards, shepherds, and threshers; and personnel of dairies and food-processing establishments.

Farm inventory—animals, harness, vehicles, motorcars, trucks, tractors, agricultural implements, transport installations, sacks, ropes, coal, foodstuffs for the workers, fodder for animals, seeds, etc.—was exempt from requisition by the army. In general, requisition was carried out according to rules established by the Ministry of Agriculture and under the supervision of a delegate of the Chamber of Agriculture.

The agricultural agent established the cultivation plan for holdings under 25 hectares and the labor plan for the community. These were ratified by the District Committee.

The autumn sowing plans had to be established by June 15, and the spring sowing plan by November 1.

Sanctions were applied for the following infractions: nonappearance of the mobilized individual at his post of duty; absence without sufficient reason; tardiness and delay; unsatisfactory work; letting land lie idle; and hiding of agricultural products. The penalty in most cases was two days' imprisonment or a fine of 500 to 1,000 lei; in case of repetition three to five days' imprisonment or a fine of 1,000 to 5,000 lei. The penalty for the last two infractions was a fine of 5,000 to 12,000 lei or, in case of repetition, a fine of 15,000 to 30,000 lei.

During the summer of 1944, with some help from the army the wheat crop had been reaped and threshed in time. In some regions, notably Braila, because of the lack of laborers the threshing of cereals was not carried out satisfactorily and some loss resulted. There, military help was given for 14 days.

The military aid which had been given mostly to the great es-

tates and to the families whose heads were sent to military service was considered detrimental to the interests of the agricultural workers. Some newspapers insisted upon establishing a labor charter for agricultural laborers. The Ministry of Agriculture was accused of considering only the implementation of the agricultural plan without much interest for the workers.

On the other hand, the Price Office was led to issue a regulation of agricultural wages, because the workers went to cities where they got better salaries, and the farmers were obliged to ask for more and more manpower from the Ministry of Defense (including the use of prisoners of war).

Following are data on officially approved wage rates, in lei per hectare (*10*):

Kind of labor	1939	1943	Percentage increase
Plowing	450	2,200	388
Hoeing	70	300	328
Harrowing	40	200	400
Flattening with wooden roller	40	200	400
Flattening with iron roller	60	300	400
Manual sowing	30	100	233
Sowing with sowing machine	100	500	400

Wages per hectare to be paid for plowing with animals in 1943 were as follows:

Plowing depth	Lei per hectare
12–15 cm.	1,400
15–18 cm.	1,800
18–20 cm.	2,200
20–25 cm.	2,600

Wages for plowing with tractors differed according to region, and were somewhat higher than those for plowing with animals, as indicated by the figures below (in lei per hectare of plowing).

Plowing depth	Danube, Dobruja, and Moldova regions	Muntenia, Bukovina	Transylvania and Banat
12–15 cm.	1,600	2,000	1,800
15–18 cm.	2,000	2,600	2,300
18–20 cm.	2,400	3,200	2,500
20–25 cm.	3,000	3,600	3,200

In 1930, according to official statistics, Rumania had a total population of slightly less than 18.1 million, residing in 9,195 communities; 9,016 of these were rural communities, with a population of 14.4 million or 79.8 percent of the total (*1*, pp. 16, 44, 404). Of these, 13.1 million (72.4 percent of the total) depended directly on agriculture, including forestry and fishing. The agricultural labor force (active agricultural population including those gainfully occupied in forestry and fishing) numbered 8.2 million, comprising 2.9 million farm operators, 4.6 million family members, and some 700,000 farm hands and agricultural laborers working on farms (*11*, p. 32). Out of 3,280,000 farms there were 1,710,000 dwarf farms (with farmland under 3 hectares) and 750,000 small farms (3–5 hectares). The above figures show that Rumania was, as it still is, a "land of peasants" (*1*, pp. 403–04).

The Ministry of Agriculture elaborated a plan for the year 1944/45 by which farmers employing laborers were obliged immediately to prepare their labor contracts for the next season. Farmers had to submit declarations giving extensive information regarding the type of cultivation in which they were engaged, the number of livestock, and the number of tractors in their possession. All communities had lists of all the village artisans and their trades. Farmers who had not yet engaged personnel for the future agricultural campaign were urged to do so immediately.

Nothing new in the way of drastic revision within the 1944 schedules was to be expected. Conditions remained approximately the same as in 1943/44.

The Ministry of Agriculture had decided that soldiers in active service could not be used to work upon private holdings, and the proprietors had to find their own labor supply.

Provisions covering labor for all categories of agricultural work were included. Special provisions were made for those groups in which the government was particularly interested. For example, operators of all areas of over 1,000 square meters which were producing materials used in the textile industry were given technical assistance. Tobacco growers who cultivated more than one-half hectare of land were mobilized to work their property, on condition that they work on contract for the Rumanian Tobacco Monopoly. In some districts this applied to people cultivating .30 hectare. In all cases they had to be over 37 years of age and of subaltern military rank. Provisions were even made for the mobilization of village artisans and communal workshops attached to professional schools,

as well as for pisciculturists raising carp and brook trout. Another section provided for the mobilization of men for such duties as threshing, shepherding, fishing, and producing periodical crops such as sugar beet and *kok-sagyz* or rubber plant.

An indication of the seriousness of the situation in the field of agricultural labor may be obtained from the provision that tractor drivers who belonged in mechanized military units, as well as air pilots, could be mobilized for agricultural work if they were over 33 years of age.

It is strange to speak of shortages in manpower in an agricultural country which had an overpopulation of agricultural workers numbering in the millions. Persons directly engaged in army operations numbered in the hundred thousands. The war effort, however, was not limited to the people on the battle front; it involved manpower engaged in activities controlled by the military authorities.

AGRICULTURAL EXPLOITATION OF OCCUPIED TERRITORIES DURING THE WAR

Under German and Russian threats and ultimatums, Rumania relinquished all or parts of four of her provinces. And being situated geographically between the Germans and the Russians (though attached by tradition to the Western democracies) she was obliged to decide which side to join in the war that was bound to break out between them.

Rumania was already under German political pressure when the war started, and had a military dictatorship of the totalitarian type. This government was not chosen by the people, and did not have the support of the King or of any political party, other than the newly created, fascist-inspired Iron Guard. Thus the decision to enter the war was entirely up to the imposed government of the country. Rumania entered the war against Soviet Russia, and her armies advanced during 1941 and 1942 as far as the Volga River and the Caucasus Mountains. During this time a part of the territory occupied by the Rumanian army was under its military administration.

In their far-reaching plans the Germans offered to permit the Rumanian government to incorporate as much Russian territory as it wanted. A similar offer had been made to the Rumanians when the first partition of Czechoslovakia took place, as regards the Czechoslovak zone of the Maramureş district. Again, when Yugoslavia was overrun, Hitler offered to Rumania the Serbian part of

Banat for which Rumania had made strong representations at the Paris Peace Conference after World War I. Rumania never entered these regions, although they had very large Rumanian populations.

In the same spirit the totalitarian government of Rumania refused to accept the incorporation of the Soviet territory. The retaking of Bessarabia and Northern Bukovina by arms was not considered a conquest of foreign territory but a reincorporation of historically and ethnically Rumanian territory taken by Soviet Russia as a result of the German-Soviet agreement. Rumania accepted the responsibility for the administration of a strip of Soviet territory of about 65,000 square kilometers, lying next to the Rumanian border between the Nistru (Dniester) and Bug rivers, and installed there a military administration to which later a very thin civilian administration was added. In fact, the local administration was left entirely in the hands of the native population.

There are no statistical figures relating to the results of the Rumanian administration in Transnistria, as the province was called. Some reports were published during the war, but these are not now available. From these reports, however, and from official and private information it is safe to say that the region had under Rumanian administration a very satisfactory situation. Food production was abundant, and the local population never suffered from want of food.

The natural fertility of the soil in the province of Transnistria cannot be used fully because of the insufficiency of rainfall. However, since it is not so densely populated as other parts of the Ukraine, it always had a large quantity of food available for delivery. Under the occupation, part of this delivery went east to the Rumanian and German armies and part to Rumania and Germany. The quantity of food delivered to Rumania was not significant. A new "Transnistria" shop was built in Bucharest, where products of the occupied territories were put on sale directly to the people. The quantities shown in this shop were impressive, but consumers were reluctant to buy, as the Rumanians are quite prejudiced, and for the most part they ignored the shiny new government propaganda shop. In Rumania there was no shortage of any of the products which were produced in Transnistria. On the contrary, Rumania was, at that time, exporting identical products to the West.

As for the "re-exported" foodstuffs (i.e., imported from occupied Transnistria and exported to Germany), we have no available

statistics, but it is safe to estimate the total value of the exported food at about 4–5 million dollars.[2] The estimation is made on the evaluation of goods for which the Transnistrian food was exchanged in Switzerland. The clothing material imported was given to the army store and to the state charity organization called "Consiliul de Patronaj." During the British-American air raids, the stocks were evacuated from the dangerous zones and saved until the Red Army took them over as "war booty." The Rumanian government has also paid, as war "compensation," for all foodstuffs the Russians claimed were looted by the Rumanian occupation authorities.

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[2] According to *12*, pages 15, 28, 34, 52, and 59, the following quantities were exported to Germany from Transnistria (thousand tons):

	1941/42	1942/43	1943/44	1944/45
Wheat	7	3	50[a]	75[a]
Raw material for margarine (oil equivalent)	3.7[b]	4[b]	.3[b]	—

[a] Delivery obligations (*Voranschlag*).
[b] From Rumania and Transnistria.

CHAPTER 2

FOOD ECONOMY

NUTRITIONAL HABITS OF THE RUMANIAN POPULATION

The nutrition of the Rumanian population is far from being standardized. First of all, there are regional differences. In the provinces that were under foreign domination for centuries the nutrition has adapted itself to the given condition of the country. Governmental measures have had their effect on nutrition. During the war the consumption of veal and meat of other young animals was prohibited, mainly to compensate for the high consumption of beef and pork by the army. After the war, and during the armistice, many animals were taken away by the Russians, and internal meat consumption in Rumania dropped to a level close to nothing. At present, little meat is distributed to the population.

Within any region there is also great variation in the nutrition of the people according to their nationality. In Transylvania, for example, the Rumanians and the Germans have different food preferences. The Germans do not eat maize. Rumanians like it. But there is a great difference between the consumption of maize up in the mountains and down on the plains, where even the Rumanians consume almost exclusively wheat.

There are some common features in the nutritional habits of urban and rural population. For instance, most city households, like the peasant, stock food in the autumn for their winter needs. Potatoes, onions, beans, lentils, carrots, pickles, cabbage, celery, tomato and fruit preserves, fruits, fats, and other foods are procured wholesale in the autumn. This is a traditional practice based on the fact that in the winter the transportation facilities are greatly decreased and few plants for cold storage are available. These foodstuffs are produced mostly by the peasants rather than by large farms, and are sold by them directly to the consumer.

Moreover, differences of a general character exist between nutrition conditions in the cities and in the villages.

The city people do not consume much milk. This does not mean that the country has no regions where the people are great milk consumers. Most of the milk comes from sheep which are milked daily.

A large quantity of cheese is produced from sheep milk; this is salted and serves for most peasants as the principal source of fat and protein in their diet.

According to Professor G. K. Constantinescu, director of the National Institute of Zootechnique, and president of the Wartime Office for Control of Milk and Dairy Products, the yearly consumption of milk in the city of Bucharest is around 30–35 million liters. In the whole country the consumption is about 2.5 billion liters yearly. Thus the average daily consumption of milk in Bucharest is less than 100 grams per capita, while in the whole country it is about 350 grams (*1*).

The land distribution is such that millions of peasants have to live on very small holdings. Thus they have to produce from a very small property not only their own food but also a surplus which they can sell to gain the necessary cash for paying their taxes and buying industrial products such as tools, boots, clothing, salt, sugar, kerosene, and tobacco.

When there is widespread overproduction and the world market is closed for agricultural products of remote countries like Rumania, the prices of these products drop and the peasants may not be able to obtain the money they need. In such cases the peasants either store their products or use them for feeding themselves and their animals. After each year of such "agricultural crisis" the strange phenomenon of sharp decrease of the general and infant mortality rates occurs.

The same phenomenon appeared after the agrarian reform of 1921. The criticism of this reform was that it provoked an almost catastrophic decrease in the export of cereals and other foodstuffs. While this was partly true, we must not ignore the reduction of the grain export because of the increased consumption of the whole peasant class.

Mention may also be made of the general experience of an increase of demand for food in every country during a period of war. In underdeveloped countries especially, millions of soldiers are fed much more substantially while they are in the army than before joining it. They get used to better food and insist on having it even when they live on their own. There is also a psychological influence arising from the hazards of war, which makes the consumption of foods of higher value increase during and even after hostilities.

During World War II these factors acted very strongly. Rumania was involved in an unpopular war. In 1941 the German soldiers

practically inundated the country. They were well fed, very clean, and well disciplined. They never seized anything irregularly. But they paid on the free market better prices than Rumanians could afford. For this reason they were unpopular, even with the people who got the better prices from them.

There is no doubt that the food market in Rumania was greatly affected by the German buyers. Not only were all the German troops stationed in Rumania fed exclusively with Rumanian food, but the German soldiers were permitted to send food packages from Rumania to their families. In the beginning these packages were unrestricted. Later they were restricted to one package per week for every soldier, and finally to one package every month. This was a heavy drain on Rumania's food supply, especially in 1941, before large German units left the country for the battles of Greece and Yugoslavia.

After World War II, food conditions in Rumania turned from good to bad. As has been shown elsewhere, during the war economic conditions were not bad and agriculture flourished. But beginning with 1944 the situation deteriorated sharply. This explains why the general death rate in Rumania *increased* after the war in contrast to the general decline elsewhere in the world. A United Nations report by Helmholz and Latsky (*2*) on the food and health situation in certain European countries, including Rumania which the authors visited in 1948, gives the following general death-rate figures (per 1,000 population):

	1937	1947
Italy	14.3	11.3
Austria	13.3	13.0
Hungary	14.1	12.3
Czechoslovakia	13.1	10.4
Rumania	19.3	21.1

Not only did Rumania have the highest general death rate, but it was the only country in this group whose death rate increased. As a consequence of the poor health conditions in Rumania, infant mortality also rose from 178 per thousand newborn children in 1937 to 199 in 1947.

The following statements made by the United Nations' experts, though they refer in general to the six countries visited by them, are quite applicable to the situation in postwar Rumania (*2*, p. 1).

> As far as possible we have tried to see the worst parts in every country so as to have a satisfactory picture of the local problems and especially of

what the children in the poor areas look like; and although there is not starvation, there yet is the picture of stunted growth, chronic underfeeding, defective hygiene and of diseases like tuberculosis, malaria and parasitic infestation. . . .

There is further the picture of immense rural unemployment and inefficiency with stagnation of human abilities during a good part of the year when able bodied men and women are producing a mere pittance by their labours. This is particularly the case in certain parts of Czechoslovakia and Moldavia on the border of Rumania with Soviet Russia where pellagra, malaria and the lack of food (all three) are playing havoc with human lives (including child life) and human output.

The absence of so-called "skin-and-bone" conditions must not be taken to mean that the food position is satisfactory; from all available evidence it is not satisfactory in any single country visited. Neither does this mean that there is little or no Mal-nutrition; there is a lot of it, in the form of "hidden hunger" (chronic under-nutrition without marked outward evidence of nutrition deficiency diseases) and "fooling of hunger" (satisfying the appetite, but not the body requirements).

An important conclusion of the authors is that, since the basic diet of the country has changed very little during the course of a whole century, changes in the diet should be introduced slowly, step by step, without interfering with the established ways of life. They recommend the addition of food yeast (preferably *torula utilis*) to the usual staple diet of *mamaliga*.

The shortcomings of the nutrition of the Rumanian people following World War II can be summarized as follows:

The monotony (monophagy) of diet, an old story in Rumania, increased. Moreover Rumania experienced a new phenomenon—lack of the most basic foods and, here and there, and sometimes throughout the country, undernutrition and even hunger.

Many highly desired items disappeared altogether from the food market in Rumania. The first to be mentioned is milk. Also foods which had to be imported (spices, Oriental fruits and preserves, oranges, bananas, cocoa, chocolate, seafood) were nonexistent, and all locally produced items were strictly rationed and distributed discriminatorily on food cards never known by the Rumanian people in their long and troubled history.

FOOD RATIONING AND THE CONTROL OF FOOD PRICES

As soon as the war began, the government studied the problem of providing the population with the necessary food. By that time the country faced the problem of keeping mobilized a large army,

which necessarily influenced the food demand. Meat consumption by the army went up to over 50 percent of the total meat consumption of the country. Sizable increases also occurred in other foodstuffs, such as fats and wheat.

The government created two special agencies to deal with the food problem. One was a department for food supply which was developed into a department for general supply (Undersecretariate of Provisioning), and the other was a department for price control. Both were under the direction of the Minister of National Economy. There were many subsequent changes in the two organizations. In 1941 a new Ministry of Co-ordination was created especially for these problems. It had the power to co-ordinate all related activities, including those concerning the army. Later the Department of Food Supply was reunited with the Department of National Economy. In 1942 the Departments of Finance, Agriculture, Industry and Commerce, and Public Works and Communications came also under the direct authority of the co-ordinating Minister of National Economy. At the end of the war these departments were again made independent, and the Ministry of National Economy became again the Ministry of Industry and Commerce with the authority of controlling prices, production, and distribution.

On the whole, food conditions and rationing were never too severe in Rumania. There was a shortage of imported food commodities, since Rumania was a part of the Axis and had to export to countries which were not in the position to export food of any kind to Rumania in return. On the other hand, Rumania was obliged to import armaments and machinery, which used much of her financial resources and kept even the balance of payment between Rumania and the other Axis countries.

The production of food in Rumania was greater than the internal consumption, and the surplus was wisely used not only for keeping active the balance of payment but also for improving the food situation by procuring from Turkey and the Near East such commodities as lemons, oranges, dates, rice, spices, and cotton. In its privileged position, Rumania was able to export salt to such countries as Yugoslavia, Bulgaria, and Hungary, previously supplied from other sources. Salt production increased during 1942/43 to 363,151 metric tons, as compared with 280,038 metric tons in the previous year.

Food rationing was introduced in the second half of 1942. In August 1943 the government instituted a new program of bread

rationing, which involved the resumption of free sales of white bread and flour. An official report states: "This measure has met with the most favorable reception among the people and has had practical political results." The report stated that the price of a loaf of white bread of 600 grams was to be 50 lei, while the same quantity of black bread was to cost only 20 lei. Ration cards were necessary to buy black bread, while white bread was sold freely.

The Bucharest economic paper, *Argus*, of July 3, 1943 printed a short article attempting to divert the attention of the Rumanian public from political and military events by emphasizing the fact that the Rumanian government had been able to supply the nation with white bread of the same quality as in prewar days. It emphasized that bread "of good old times" in many varieties was now available and that "the bread question is not a problem for Rumania in the actual war."

The reproduction of such an opinion printed in a Rumanian economic daily reflected at any rate the situation of food supply in Rumania. As for the real reason for giving the population white bread and flour without restriction, it is proper to mention the official explanations given at that time by the head of the Rumanian government.

First, the government wanted to prevent limitless export of food to Germany and Italy. Second, it wanted to save the morale of the Rumanian people for the expected final showdown with Hungary, which had openly threatened to take southern Transylvania from Rumania. Finally, it was the only possible way to secure cheap black bread for the underprivileged on ration cards, while the well to do paid 150 percent more for the white bread they wanted to have. And this method worked not only to the satisfaction of the government but to that of the consumers of white and black bread as well.

Beginning with November 15, 1943, the Undersecretariate of Provisioning permitted the distribution of sugar without ration cards. In the fall of 1943 the ration cards became little more than a symbol. The government maintained them only as proof—in the face of the pressure for greater food exports to Germany—of Rumania's inability to furnish greater quantities of food. For only one item—black bread—was it necessary to have ration cards. The bakers were reluctant to bake black bread because its price was 20 lei for a 600-gram loaf, as against 50 lei for the same amount of white bread. But the poor people insisted upon black bread, and the bakers were obliged to have quantities of it on hand to satisfy the possessors of ration cards.

In November 1943 an "Office for Export of Fruits and Vegetables" and an "Office for Export of Chickens and Eggs" were established. The creation of these offices was an indication of the state of the market with respect to the commodities in which they dealt. Not only were the domestic needs covered, but surpluses were available for export.

Generally speaking, Rumania was well provisioned with food during the war. Only a few items were rationed, and the government was able at any time to provide the population with the necessary food.

The psychological status, however, was different. The uncertainty about the extension of the war and the possible surprises it might bring; the fear that the government might collapse in the face of the Nazi pressure; and even the difficulties caused by the inadequacies of the Rumanian transport system—all created a tension that was expressed in hoarding, fluctuations in prices, and black marketing. Black marketing, although it practically put a stop to the export of food products from Rumania, did not really flourish until after the first air bombardment of Bucharest which occurred on April 4, 1944.

Several papers published lists of free prices. The following were quoted around January 1944 (in lei per kg. except as otherwise indicated):

	Bucharest	Chişinău	Dorohoi	Ploeşti
Rice	280			
Caviar	780			
Apricot jam	253			
Prune marmalade	190			
Black raisins	302			
Ceylon tea (per 100 gm.)	1,570			
Cinnamon (per 100 gm.)	1,270			
Veal		130	110	210
Pork		160	180	190–210
Paris sausage		250		
Hani		340		
Cheese:				
Sheep's milk		300	320	
Cow's milk			100	
Beef			100	125–140
Milk			24	
Fresh butter			560	
Bacon				240–270
Large geese (each)				680
Turkey, female (each)				1,000–1,200
Eggs (each)				14–15

It is noteworthy that even as late as in the spring of 1944 the government was concentrating on the fight against increasing prices, and not on distribution of food. Generally speaking, the population could easily find all kinds of food on the market. Yet the government printed and distributed ration cards for the city population. The people did not use them regularly, but when a certain commodity disappeared from the market, the government started to distribute fixed quantities of this commodity so as to make speculation too risky. For example, on March 5, 1944 the papers announced that the Municipality of Bucharest would, on the basis of ration cards No. 8, marked "sugar," distribute 250 grams of meat to each person at the following prices, per kilogram: beef, 148 lei; pork, 210 lei; buffalo meat, 130 lei; pork fat, 370 lei; pork lard, 170 lei. On March 8, on the basis of ration card No. 25, marked "various," one liter of oil was distributed. On March 26, 250 grams of meat and 500 grams of bacon per person were allowed on ration card No. 34; on December 23, 1943, 1,500 grams of pork on ration card No. 35, marked "cornmeal," and 250 grams of fresh bacon, on ration card No. 32, marked "cornmeal." For the Easter holidays, people were able to buy 10 kilos of fat without restrictions (*3*). Such combinations abounded, and this tended to discourage speculation and to keep prices down.

On February 10, 1944 *Argus* stated that "it is only the prices which remind one of war conditions."

In the free market in Bucharest the prices for imported commodities were at that time as follows (lei per kilogram):

Tea	10,600–11,140
Pepper (Singapore)	3,000– 5,000
Cinnamon	6,000
Clove	6,700
Rice	350
Olive oil	620

The following comparative list of retail prices of animal and vegetable foods was taken from Bucharest papers of January 5, 1944 (in lei per kilogram):

Products	Countrywide averages[a]			In Bucharest		
	1939	1943 (March)	Index numbers 1939 = 100	1939	1943 (March)	Index numbers 1939 = 100
Bread and whole meal	67.50	35.64		8.00	33.33	
Maize meal	5.10	33.34	654	6.35	38.00	598
Potatoes	3.55	17.41	490	4.05	12.00	296

Haricot beans	14.10	28.94	205	16.40	28.00	171
Onions	5.20	23.80	458	5.85	15.00	256
Sunflower oil, edible	39.35	173.12	440	37.65	212.00	563
Sugar, sand crystals	32.00	139.24	435	32.00	170.00	531
Beef	23.80	117.86	495	28.65	148.00	517
Animal fat	45.80	294.57	643	50.75	370.00	729
Milk (*liter*)	5.70	34.40	604	10.10	70.00	693
Cheese	48.15	255.65	531	46.65	400.00	857
Simple average			496			521

[a] Averages of prices registered in all of the administrative units (*judeti*) in the kingdom.

Although the simple average of either of the above two price series cannot be considered a representative price index, they may serve to indicate how great was the change in the general level of retail prices of agricultural commodities in Rumania during the last half of the war period.

An official report, dated May 4, 1944, made the following statement about conditions in Bucharest food markets before the first air raid on that city on April 4, 1944: "At that time there was an abundance of all necessary commodities with the possible exception of edible oil, dressed fowl, and fresh fish."

But the difficulties soon grew more alarming, and many items were insufficient in the Bucharest market. On the other hand, in distant cities the prices became very low as a result of their isolation from Bucharest.

By the second half of 1944 the extension of the war had influenced the situation for the worse. Food reserves declined, prices increased, and rationing became more stringent. The quality of some food also declined, especially that of bread. It was permitted to buy a reserve of 10 kilograms of flour per person. Meat distribution encountered some difficulties, mostly in transportation, but the population could still find meat on the free market.

Nothing could be more enlightening as to the real food conditions in Rumania during the war than the list of commodities entering Bucharest—a municipality with one million inhabitants—in the year 1943. Appendix Table XI (p. 286) shows the quantities delivered by the producers—mostly peasants—around Bucharest, and the quantities delivered by merchants by train from centers of collection in distant regions. The quantities registered at the outskirts comprise also the commodities sent by merchants on trucks. The monthly consumption of certain commodities in 1942 and 1943 is also of interest (see Appendix Table XII, p. 288).

FOOD INDUSTRY

There were 1,066 factories manufacturing foodstuffs of different kinds in Rumania in 1935. Most of them were in Transylvania and in the province of Muntenia. They produced almost entirely for internal consumption. Appendix Table XIII (p. 288) gives a general view of the production of the food industries in Rumania before the war.

Since internal consumption was covered by home production, imports of the kinds of foodstuffs already manufactured in the country were very small. On the other hand, with the exception of edible oil, extremely little was exported of the foodstuffs manufactured in Rumania. In later years, especially during World War II, exports of edible oil increased considerably.

The various kinds of food factories existing in Rumania in 1935 numbered as follows:

Sugar factories	15	Malt	5
Flour mills	315	Macaroni	20
Spirits	194	Biscuits	15
Edible oil	145	Coffee substitutes	6
Breweries	44	Vinegar	10
Candy	58	Bread	36
Brandies	37	Cereal sorter and cleaner	23
Cold cuts	48	Ice	40
Canned meat	19	Others	22
Cheese, milk	14	Total	1,066

The sugar factories, the candy factories, and the flour mills were the largest of all factories, with the heaviest investments and the greatest numbers of workers.

In general, however, the productive capacity of the food factories was very low. Although the products were of high quality, packaging techniques could not be compared with those in the Western industrial countries and, therefore, competition with them was not possible. The Rumanian food industry was not prepared to accept the international standards used in the world market, because the quantity destined for export was not large enough and the flow of products was not steady, being based on the peasant system of production rather than on modern farming.

After the war the agricultural production decreased to such a level that the problem of exportation has never been raised. The principal problem of the food factories in Rumania now is to pro-

duce, at any rate and with no consideration for the quality, the amount of foodstuff necessary for internal consumption.

CITATIONS

1 The Official Monitor (Bucharest), May 20, 1943.

2 H. F. Helmholz and J. M. Latsky, *Report on Nutrition and Health Aspects in Six UNICEF Countries in Europe* (U.N., Econ. and Soc. Council, Unrestricted, E/ICEF/78, 15 Oct., 1948, mimeographed).

3 Donauzeitung (Bucharest), Mar. 16, 1944.

4 N. Arcadian, "Industria Alimentara," *Enciclopedia României*, III (Imprim. Natl., 1939).

CHAPTER 3

RUMANIA UNDER THE ARMISTICE CONVENTION

The armistice completed the change in the agricultural situation of Rumania which actually started with the overthrow of the pro-Axis regime on August 23, 1944.

The principal change in Rumania's agriculture was brought about by the general policy of the new military occupation. It is true that both occupying powers (Germany and Russia) imposed upon Rumania the obligation to maintain on the battlefront permanently between 20 and 30 divisions. Nevertheless there were important differences between the two foreign occupants from the point of view of the development of agriculture.

The German pressure had been exercised toward raising the production level to a maximum to "increase the common war potentialities of both countries" (which meant to produce for the Axis).

The immediate Soviet objective was to remove to Russia as much as possible, not only from Rumanian agricultural production but also from its inventory. The explanation given for this policy was that the Russian people had suffered very much from the Nazi exploitation and they urgently needed replacement of everything stolen by the Nazis and by the Rumanian army.

The Armistice Convention was drawn up without regard to the economic capacity of Rumania. No Soviet authority ever asked about the quantities of anything existing in Rumania. For example, the Soviet authorities demanded from the Rumanian government the immediate delivery to the Soviet army of large quantities of penicillin. This was a wartime discovery of the Allies, not a single unit of which entered Rumania during the war. In the same manner the Soviets demanded delivery of large quantities of coffee, tea, black pepper, and similar products that Rumania had imported before the war, but which were not imported during the war because of the efficient blockade by the Allies.

At the end of the war the Allies proclaimed the principle that the level of living of the "former enemies" should not be permitted to be higher than that of the victors. The application of this principle furnished the occupation authorities with an excuse for unprece-

dented seizures, inasmuch as they could always point to regions in their own countries that were poorer than the occupied area.

As the Armistice Convention was an imposed treaty agreement, there was no place for protest against any excess.

In some respects, the policy of the Russians was *opposite* that of the Germans. The latter tried to get from the country as much as they could by persuasion, by exchange, and by political pressure. They never seized anything directly. They were not even able to buy on the Rumanian market without the permission of the Rumanian government. The result was that during the war Rumania was sufficiently provisioned with food. Even more important, the Germans did not deplete the agricultural inventory of the country. On the contrary, they supplied the country with machines, seeds, and animals. The number of tractors more than doubled during the war (see Appendix Table X, p. 285).

During the Russian occupation there were several difficulties. Most important was the disorganization of the transportation system of the whole country. During the war the Rumanian railroads transported millions of tons for the German army. They were able to work to their full capacity without sabotage and without accidents. Immediately after the Russian occupation, the whole Rumanian transportation system broke down.

Large numbers of tractors and draft animals were taken to Russia. Consequently, plowing and sowing were so badly hindered that the grain production of the next year was far below the level of the war years.

The peasants suffered heavy losses because of the occupation. The Rumanian authorities could only partially register the so-called "irregular" seizures by the Red Army. In the period between September 1944 and March 1945 the government had recorded the following goods as seized by the Russians (data from No. 17997 memorandum of the Rumanian Armistice Commission, May 26, 1945):

Horned cattle	80,058
Horses	96,350
Sheep	313,912
Pigs	107,139
Grains (metric tons)	136,830
Fodder (metric tons)	120,000

Besides these "irregular seizures" there was a "legal" armistice obligation. By April 1945, 160,000 tons of grain had been delivered

to the Soviets. Later, a new "legal" obligation was imposed upon Rumania as "compensation for war damages," which for the first year was fixed at 474,300 tons of grain. Up to the harvest of 1945 Rumania delivered about 600,000 tons of grain to Russia.

In January 1945 it was already apparent that the grain stock of Rumania had been completely exhausted. Consequently, in a new agreement reached on January 16, 1945, the Soviets had accepted that instead of grain Rumania should pay its armistice obligations in mineral oil. These formal agreements are proof that the Soviets were aware of the grain shortage in Rumania. Nevertheless, they continued to take away all visible stocks throughout 1945. But, at the request of the Rumanian government, the Soviet consented to "lend" to the Rumanian government 300,000 tons of grain, to be repaid before the end of 1947. Rumania had to pay 5 percent for this "loan." Thus, the Soviet government was collecting grain from Rumania, and at the same time the same grain was lent to Rumania.

We are not in the position to know the quantity of grain delivered to Rumania by the Soviet government. There was no registration at that time of the goods flowing from and to Russia. In the early period of occupation, Rumania was not allowed, on Soviet orders, to re-establish its frontier guards and customs officers along the Rumanian-Russian border, or even on the western frontiers of Rumania, toward Soviet-occupied Hungary. Not until 1945 did the Russian authorities permit the gradual building up of the Rumanian customs offices and frontier guards.

Great losses were inflicted upon Rumania's agriculture by the heavy seizure of her breeding and draught animals. These seizures at the beginning were made without much discrimination even as to the usefulness of the animals. Generally, the population was not co-operative in satisfying the Soviet demands and, because much of the livestock was hidden away, the Russians had to take from what they could find in the villages.

APPENDIX NOTE AND TABLES

APPENDIX NOTE

STATISTICAL SOURCES

The sources of agricultural statistics in Rumania are few and their data are not generally satisfactory. There are many reasons for this unfortunate situation.

The first is the inadequate knowledge of the surface of the land. In some regions no detailed land measurement has been made; in others the registers have not been kept up to date. Thus, data on land area are based on estimates rather than actual measurement. Some figures have been "accepted" by the authorities to serve as a permanent basis for comparisons.

In order to understand the origin of this peculiar situation one must remember that Rumania was built up gradually from 1864 to 1919. The core was the "Old Kingdom" which, divided into the Moldavian and Wallachian principalities up to 1864, was for centuries under Turkish sovereignty. They were finally liberated in 1878, and real Rumanian leadership started only after that year. The two reunited principalities had no industry, no capital, no roads or railroads, nor any other means with which to start a new life at the European level, after centuries of mere existence under Turkish and, occasionally, Russian or Austrian occupation. The real reconstruction of the country did not begin until the turn of the century. Even so, in 1913 the country was involved in the Balkan War and in 1916 in the First World War, the latter of which again meant foreign—German and Russian—occupation and large-scale devastation.

The period between World Wars I and II was devoted entirely to the reconstruction of the devastated country, and this work occupied the full energy of the young nation. Extensive cadastration was made, especially in the Old Kingdom, and more and more districts were in the position of having their land cadastration completed. However, although the reconstruction developed with unexpected speed, it was not able to overcome fully the handicaps of the past. That explains why such basic works as the cadastration and even the commassation of the land could not be finished by the outbreak of World War II. And in Eastern Europe the preparation for the Second World War started in the early thirties. Thus the second interwar decade was marked by the pressure of international tension and the direct threats of the dictators who dominated the international scene.

No just evaluation of the internal situation of the Danubian countries can be made without a thorough appraisal of the conditions under which these countries were obliged to work, not for progress and advancement, but for their very survival. As a result of these conditions, Rumania, before entering the war, was deprived by some of her neighbors, under the dictates of the Hitler-Stalin team, of an important part of her territory and population. This

demonstrates that the tension was not mere imagination but a tragic reality, entirely comparable to that of the present time.

The second cause of the inadequacy of knowledge in agriculture was the lack of any complete agricultural census for the whole territory of the country enlarged after World War I. In 1930 a short-cut "census" was taken by the Ministry of Agriculture, with improper methods and independently of the population census which was under way. The results were only partially tabulated, and have been used officially only in the case of a few items and then with proper reservation.

The first modern agricultural census was made in 1941. This was restricted to the territory of the country that was not under occupation at that time. The returns of this census are characeristic for the districts, but not for the country as a whole. The results were tabulated, but were printed only in part during the war. (In this census Northern Transylvania, Northern Bukovina, Bessarabia, and Southern Dobruja were not included. Later, a special census was made in Northern Bukovina and Bessarabia after these provinces were retaken from the Soviets.)

The most recent agricultural census is that of 1948, but it was taken under Soviet military occupation and unsettled agricultural conditions, three years after the Communist regime had been installed in Rumania under the protection of the Red Army.

The permanent statistical registration was conducted by the Ministry of Agriculture. Until World War II the local registration for agriculture was entirely in the hands of local administration. The disadvantages of the method were the extensive formalism and lack of direct and personal contact with agricultural problems. As a rule, agricultural-statistical registers were used periodically for tabulation. These registers were not kept properly up to date because the village administration was understaffed. For this reason most of the statistical tables were frequently repetitions of the originally registered statistical figures. For some districts the same statistical figures were given year after year.

The statistical work at both the munipical and district levels was in the hands of untrained office clerks. The Ministry of Agriculture, even though employing competent technical personnel in its own central offices, could not obtain reliable statistics out of the unreliable original reports.

The situation changed radically during World War II with the creation of three new technical posts at the local, county, and district levels. The first was that of a *local agricultural agent* trained and employed by the Ministry of Agriculture. His main task was to keep permanent books on the agricultural land and its cultivation and production, deriving his information through permanent contact with the local peasant population. The *district agronom* established a plan of cultivation, and the agent was obliged to supervise its fulfillment and to send in periodic reports. The work of the agent was done under the control and responsibility of the office of the village administration. The periodic reports were sent to the *county statistical censor* (county statistician) who was appointed, trained, paid, and disciplined by the Central Institute of Statistics. Being especially trained for agricultural statistics, he was able to tabulate properly all incoming village reports, to expedite the work, and to make individual sampling checks. His tabulations were sent

directly to the Institute. They were reliable and technical, and furnished to the Institute's highly trained statisticians trustworthy material for the compilation of exact statistical figures. These were turned over to the Ministry of Agriculture with the least possible delay.

Besides providing periodic data on cultivation and production, this organization was able to reorganize all fields of statistical information concerning agriculture.

It is not possible to determine how this system has been developed lately, because the new regime is not interested in purely statistical registrations, but primarily in administrative ones for use as a source of information concerning individual peasants. We are not able to evaluate the usefulness and the reliability of this kind of registration for statistical purposes. As for publication of the agricultural statistics, the replacement of absolute figures by relative figures greatly limits the use of the data. Even relative figures are very seldom published or communicated to the United Nations Statistical Office.

APPENDIX TABLES

TABLE I.—TOTAL AND ECONOMICALLY ACTIVE POPULATION IN SELECTED COUNTRIES AROUND 1930*

Country	Year of census	Total population (*thousands*)	Active population (*percent*)
Rumania	1930	18,053	58.4
USSR	1926	147,027	57.5
Bulgaria	1926	5,749	56.2
France	1934	41,229	52.4
Germany	1933	65,336	49.4
Switzerland	1930	4,077	47.6
Great Britain	1931	39,948	47.2
Austria	1934	6,760	46.9
Hungary	1930	8,688	46.0
Japan	1930	64,450	45.3
Greece	1928	6,204	44.3
Italy	1931	41,177	41.9
Norway	1930	2,814	41.5
Czechoslovakia	1930	14,729	40.2
Netherlands	1930	7,936	40.1
United States	1930	122,775	39.8

* Data from S. Manuila and D. C. Georgescu, *Populatia României* (Rumania, Institutul Central de Statistică, 1938), p. 71.

TABLE II.—PERCENTAGES OF ALL MALES AND FEMALES ECONOMICALLY ACTIVE IN SELECTED COUNTRIES AROUND 1930*

Country	Males	Females
Rumania	64.8	52.2
USSR	63.8	51.6
Bulgaria	61.4	51.0
France	68.9	37.1
Germany	65.6	34.1
Japan	58.9	31.6
Austria	64.7	30.4
Switzerland	67.8	28.9
England	69.2	26.9
Greece	64.1	24.7
Hungary	69.0	24.0
Norway	62.0	22.0
Czechoslovakia	60.2	21.4
Netherlands	61.3	19.2
Italy	66.4	18.5
United States	61.3	17.7

* Data from S. Manuila and D. C. Georgescu, *Populatia României* (Rumania, Institutul Central de Statistică, 1938), p. 75.

TABLE III.—PERCENTAGE DISTRIBUTION OF ECONOMICALLY ACTIVE POPULATION OF EACH SEX BY OCCUPATIONAL GROUPS AROUND 1930*

Country	Agriculture		Industry		Commerce		Transportation		Others	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Rumania	70.7	87.1	10.7	2.9	4.0	2.3	2.8	.4	11.8	7.3
USSR	79.9	90.7	8.5	3.0	2.0	6.7	2.6	.2	7.0	5.4
France	32.9	40.4	37.6	26.9	11.2	14.7	6.8	1.7	11.5	16.3
Germany	22.6	40.5	49.4	24.0	12.3	15.9	7.0	.8	8.7	18.8
Japan	43.3	63.3	24.4	10.5	18.3	14.5	4.7	.4	9.3	11.3
Austria	31.1	32.7	38.8	22.9	11.1	13.9	6.4	1.1	12.6	29.4
Switzerland	27.2	8.4	48.5	37.5	11.5	21.4	5.8	1.2	7.0	31.5
England and Wales	7.5	1.1	49.6	38.3	17.7	22.1	10.6	1.7	14.6	36.8
Hungary	53.2	44.2	25.5	16.2	5.8	5.3	3.6	.8	11.9	33.5
Norway	43.7	12.8	29.3	19.1	9.8	19.7	12.0	2.1	5.2	46.3
Czechoslovakia	28.3	28.3	45.2	34.4	8.3	9.7	6.4	.8	11.8	26.8
Netherlands	22.6	14.3	43.4	21.5	15.1	17.9	9.6	1.3	9.3	45.0
Italy	49.6	39.4	28.8	31.5	8.5	7.5	5.8	.7	7.3	20.5
United States	25.8	8.5	34.4	22.4	17.1	22.1	10.5	4.1	12.2	42.9
Greece	51.1	60.5	17.0	12.9	10.2	.9	5.4	.1	16.2	25.6
Bulgaria	69.7	92.5	14.0	3.0	2.3	.1	4.7	.3	9.3	4.1

* Data from S. Manuila and D. C. Georgescu, *Populatia României* (Rumania, Institutul Central de Statistică, 1938), pp. 74–75.

TABLE IV.—TOTAL VALUE OF AGRICULTURAL PRODUCTION, 1935–43*

(*Million lei*)

Year	Annual plants[a]	Vineyards	Total value	Index of value of annual plants
1935	26,192	2,571	28,763	100
1936	31,170	2,104	33,274	—
1937	32,069	2,553	34,622	—
1938	35,722	1,971	37,693	—
1939	40,240	...[b]	...	154
1940	46,383	...[b]	...	177
1941	83,995	...[b]	...	320
1942	98,639	...[b]	...	377
1943	215,374	...[b]	...	822

* Data from Rumania, Institutul Central de Statistică, *Statistica Agricola a României în 1941–1944* (1947), p. 7, Tables 11 and 12.

[a] Wheat, corn, millet, barley, oats, rye, rice, buckwheat, fodder, beans, peas, lentils, chick peas, onions, potatoes, cabbage, melons, pumpkins, hemp, hempseeds, rape, poppy, sunflower, sugar beets, chicory, tobacco, anise, cotton, soy beans, and other industrial plants.

[b] Data not available. For 1940–43 the production of wine is given in quantities as follows (1,000 hectoliters):

1940	7,491
1941	5,927
1942	6,750
1943	5,548

TABLE V.—CEREALS FOR GRAIN BEFORE AND DURING WORLD WAR II: AREA CULTIVATED, PRODUCTION, AND YIELD PER HECTARE*

Year	Districts	Wheat	Corn	Rye	Barley	Oats	All cereal crops
			AREA CULTIVATED (*million hectares*)				
.....	71	4.1	4.9	.45	1.1	.6	11.2
9 average	48	2.4	3.7	.13	.7	.5	7.4
.....	48	2.1	3.6	.09	.6	.4	6.8
.....	48	2.3	3.3	.09	.5	.4	6.6
.....	48	1.7	3.4	.07	.6	.5	6.3
.....	48	2.2	3.2	.09	.6	.5	6.6
.....	58	2.8	3.2	.17	.6	.6	7.4
.....	58	1.9	2.7	.11	.6	.6	5.9
			PRODUCTION (*thousand metric tons*)				
.....	71	4,453	6,051	431	816	487	12,238
39 average	48	2,596	3,902	122	550	401	7,571
.....	48	1,376	3,743	53	496	371	6,039
.....	48	1,986	3,347	55	391	333	6,112
.....	48	855	2,182	25	332	337	3,731
.....	48	2,319	2,884	68	586	500	6,357
.....	58	3,289	4,128	166	451	476	8,510
.....	58	1,066	1,099	44	267	258	2,734
			YIELD PER HECTARE (*quintals*)				
.....	71	10.9	12.3	9.6	7.4	8.3	10.9
-39 average	48	11.1	10.9	9.3	12.6	7.9	10.2
.....	48	6.7	10.5	5.9	8.4	8.6	8.9
.....	48	8.7	10.3	6.3	7.5	7.6	9.3
.....	48	5.7	7.0	4.2	5.7	6.7	5.9
.....	48	10.9	9.6	8.2	10.0	9.5	9.6
.....	58	11.5	12.8	9.5	7.4	7.4	11.5
.....	58	5.6	4.1	4.1	4.5	4.1	4.6

* Data for 1939, 1944, and 1945 from Internat. Inst. Agr., *International Yearbook of icultural Statistics, 1941–42 to 1945–46*, I (Rome, 1947); other years from Rumania, Institutul Central de Statistică, *Statistica Agricola a României în 1941–1944* (1947), p. 2.

TABLE VI.—AREA, PRODUCTION, AND YIELD PER HECTARE OF IMPORTANT NONCEREAL CROPS, 1939–44*

Crop	1939	1940	1941	1942	1943	1944	1945
Number of districts	71	48	48	48	48	58	58
			AREA (*thousand hectares*)				
Beans: grown alone	64	42	64	93	76	77	73
associated	(974)	(679)	(764)	(800)	(651)	...	(690)
Peas	52	61	117	203	264	185	151
Lentils	19	13	15	—	—	13	7
Potatoes: grown alone	207	110	112	155	174	221	216
associated	(99)	(32)	(53)	(47)	(31)	...	(47)
Onions	25	12	14	19	16	20	22
Cabbage	27	15	19	17	13	14	18
Melons, all kinds	42	21	18	—	21	17	24
Pumpkins: grown alone	6	10	2	—	—	4	4
associated	(1,112)	606	792	...	...	...	(587)
Sunflower	164	144	276	180	169	248	346
Rape	61	28	25	22	11	14	11
Hemp	58	33	47	66	64	103	98
Flax	12	13	37	38	33	39	30
Cotton	7	18	18	15	35	49	52
Sugar beet	53	37	55	37	61	53	44
Tobacco	22	13	14	18	—	28	24
			PRODUCTION (*thousand quintals*)				
Beans: grown alone	344	289	612	608	640	545	200
associated	1,332	592	2,072	2,000	1,623	...	815
Peas	578	707	1,448	1,681	3,369	1,496	549
Lentils	152	71	78	—	—	79	16
Potatoes: grown alone	18,497	7,128	7,544	11,111	15,362	18,421	8,484
associated	1,387	307	992	876	930	...	445
Onions	1,349	512	737	788	917	1,136	445
Cabbage	2,962	1,315	1,957	1,071	961	1,875	740
Melons, all kinds	2,334	1,151	1,244	—	1,795	2,337	1,093
Pumpkins: grown alone	295	148	117	—	—	526	52
associated	14,829	5,500	15,185	...	...	...	5,772
Sunflower seed	1,424	1,259	1,790	1,195	1,256	1,730	1,388
Rapeseed	358	144	121	65	54	70	27
Hemp fiber	389	181	234	284	304	464	306
Flax fiber	57	42	149	118	113	131	72
Cotton fiber	13	12	22	17	30	52	47
Sugar beet	8,550	5,183	5,673	3,315	7,394	7,138	2,014
Tobacco	144	101	105	108	—	—	107
			YIELD PER HECTARE (*quintals*)				
Beans: grown alone	5.4	6.9	9.5	6.5	8.6	7.1	2.7
associated	1.4	.9	2.7	2.5	2.6	...	1.2
Peas	11.1	11.5	12.4	8.3	13.0	8.1	3.6
Lentils	7.8	5.3	5.3	—	—	5.9	2.3
Potatoes: grown alone	89.2	64.5	67.1	72.0	89.5	83.5	39.3
associated	14.1	9.7	18.7	18.4	30.5	...	9.4
Onions	54.4	41.0	53.0	42.3	57.5	55.6	20.2
Cabbage	108.9	90.3	105.2	65.0	81.9	131.1	40.7
Melons, all kinds	55.8	53.7	69.9	—	85.7	134.3	45.7
Pumpkins: grown alone	47.2	15.5	51.4	—	—	148.3	12.6
associated	13.4	9.0	19.2	...	...	...	9.8
Sunflower seed	8.7	8.8	6.5	6.7	7.6	7.0	4.0
Rapeseed	5.8	5.2	4.6	3.1	5.5	5.0	2.5
Hemp fiber	6.7	5.6	4.9	4.3	5.0	4.5	3.1
Flax fiber	4.7	3.1	4.0	3.2	3.8	3.4	2.4
Cotton fiber	1.9	.7	1.2	1.1	.9	1.1	.9
Sugar beet	160.2	141.3	102.5	90.4	123.1	134.3	46.1
Tobacco	6.7	8.1	7.5	5.9	—	—	4.5

* Data from Internat. Inst. Agr., *International Yearbook of Agricultural Statistics, 1941–42 to 1945–46* (Rome, 1947), III, 124–25. Yields per hectare computed from unrounded figures.

TABLE VII.—NUMBER OF ANIMALS SLAUGHTERED IN 1939, 1945, AND 1946*
(*Thousand head*)

Kind	1939	1945[a]	1946
Mature cattle	418.3	110.1	110.2
Calves and cattle under 2 years	569.2	15.6	24.0
Sheep, goats	374.4	109.4	41.9
Lambs	1,039.5	157.8	129.3
Pigs	776.7	35.8	82.3
Horses	.1	7.0	6.5

* Data from Rumania, Institutul Central de Statistică, *Statistica Agricola a României: Inventarul Agricol în Anul 1946* (1948), p. 34. [a] Northern Transylvania not included.

TABLE VIII.—EXPORTS OF LIVESTOCK AND LIVESTOCK PRODUCTS FROM RUMANIA, 1938–44*
(*Metric tons except as noted*)

Year	Horned cattle	Horses	Sheep	Fowls	Pigs	Meat	Eggs
1938	23,231	1,876	1,941	2,436	29,485	3,846	11,299
1939	38,601	820	3,269	2,080	32,647	11,601	14,768
1940	14,796	1,266	120	429	11,794	11,290	8,593
1941	2,248	—	16	28	154	114	1,016
1942	16,690	55	15	112	4,334	2,698	3,114
1943	32,036[a]	5[a]	407[a,b]	20,975[a]	4,665	5,662	647
1944	6,776[a]	179[a]	100[a,b]	6,288[a]	2,250	1,347	304

* Data from Rumania, Institutul Central de Statistică, *Statistica Agricola a României: Inventarul Agricol în Anul 1946* (1948), pp. 34–35.
[a] Number of head. [b] Including goats.

TABLE IX.—ESTIMATES OF DELIVERIES OF LIVESTOCK UNDER THE ARMISTICE CONVENTION*
(*Number of animals*)

Kind	Seizures	Art. 10[a]	Art. 11[b]	Art. 12[c]	Total	Total deliveries and seizures as of March 31, 1946[c]
Horses	96,400	—	36,000	93,700	226,100	247,300
Horned cattle	80,100	202,400	48,000	62,500	393,000	482,400
Sheep	313,900	221,900	90,000	244,700	870,600	1,209,300
Pigs	107,100	76,200	24,000	1,500	208,900	287,700

* Data from N. Georgescu-Roegan, "Agriculture" (manuscript dated 1951).
[a] Memorandum No. 17,997. Deliveries end of March 1945. Until the end of the year, the equivalent of at least 21,000 tons should be added.
[b] Letter of Soviet Control Commission of October 4, 1945. Ref. 13-28/507, and of November 21, 1945, Ref. 13-2/610 to the Rumanian Prime Minister. Deliveries as of end of November 1945.
[c] Official data of the Rumanian Armistice Commission, apparently based on more complete figures concerning the seizures, though not much greater than those given above, since the difference includes one more year of deliveries under Art. 10 and some supplementary deliveries under Art. 11.

TABLE X.—AGRICULTURAL EQUIPMENT BEFORE AND DURING WORLD WAR II

(In thousands)

Implement	1927 [a]	1937 [a]	1937 [b]	1937 [c]	1940 [c]	1943 [b]	1945 [c]	1946 [c]
Tractors	3.3	4.7[d]	3.4[d]	4.0[d]	4.2	8.3	9.0	9.6
Seeding machines	42.2	72.5	55.9	63.9	59.2	67.6	76.0	72.8
Harvesters	55.5	68.2	52.6	53.4	37.8	42.6	42.3	40.6
Threshing machines	12.8	14.7	12.6[e]	15.2[e]	10.3	12.3	14.5	14.2
Steam engines	—	9.0	—	—	5.8	6.6	7.1	7.0
Plows	1,684.4	2,265.0	1,416.2	1,713.8	1,032.8	975.3	1,139.2	1,186.6
Harrows	1,098.9	2,065.5	1,328.5	1,544.9	663.0	658.5	819.1	852.1
Cultivators	319.1	582.0	443.5	464.8	248.4	248.3	247.6	252.9
Carts	—	2,362.9	1,559.1	1,728.5	816.1	1,043.9	1,107.8	1,205.0

[a] Prewar territory (71 districts); data of the Rumanian Ministry of Agriculture.

[b] Present territory without Northern Transylvania (48 districts); data from Rumania, Institutul Central de Statistică, *Statistica Agricola a României: Inventarul Agricol în Anul 1943* (1946).

[c] Present territory (58 districts); data from Rumania, Institutul Central de Statistică, *Statistica Agricola a României: Inventarul Agricol in Anul 1946* (1948), p. 14.

[d] Data for 1935.

[e] Data for 1938.

TABLE XI.—FOOD COMMODITIES ENTERING BUCHAREST DURING 1943*
(Metric tons except as otherwise indicated)

Commodity	Outskirts	Station	Total
Cattle	—	33,105	33,105
Lambs (thousand head)	56	166	222
Chickens (thousand head)	582	—	582
Chickens	—	6,691	6,691
Meat	96	7,536	7,632
Sausage	136	2,182	2,318
Eggs (thousand pieces)	3,743	175,027	178,770
Milk	6,638	1,771	8,409
Cream	19	196	215
Cheese	482	6,658	7,140
Cheese products	19	1,043	1,062
Butter	3	2,455	2,458
Tallow and grease	8	1,213	1,221
Fish, fresh	51	8,711	8,762
Fish, salted	—	651	651
Caviar	—	51	51
Wheat	13,053	65,764	78,817
Flour	274	4,726	5,000
Groats	—	768	768
Rye	—	5,275	5,275
Corn	4,150	27,010	31,160
Corn meal	72	312	384
Rice	133	2,376	2,509
Oats and barley	1,418	35,822	37,240
Millet, grain	18	1,712	1,730
Beans, dried	646	15,189	15,835
Peas	3,938	1,049	4,987
Lentils	2	135	137
Chick-peas	7	763	770
Soybeans	1	2,355	2,356
Sunflower seed	441	23,599	24,040
Various seeds	182	22,572	22,754
Rapeseed oil	95	7,486	7,581
Vegetable oil	—	3,729	3,729
Potatoes	27,374	31,376	58,750
Turnips	33	14	47
Carrots	2,029	111	2,140
Beets	460	25	485
Radishes	667	—	667
Cabbage	8,660	6,319	14,979
Cauliflower	258	4	262
Cucumbers	3,793	138	3,931
Tomatoes	14,205	16	14,221
Eggplant	1,570	—	1,570
Beans, green	3,099	93	3,192
Corn, green	807	5	812
Asparagus	22	8	30
Spinach	1,174	65	1,239

* Data from *Argus* (Bucharest), Jan. 14, 1944.

TABLE XI.—FOOD COMMODITIES ENTERING BUCHAREST DURING 1943—(*Concluded*)

(*Metric tons except as otherwise indicated*)

Commodity	Outskirts	Station	Total
Salad greens	793	21	814
Soup greens	490	—	490
Okra	45	—	45
Peppers, green and red	8,387	50	8,437
Onions, dried	3,722	5,553	9,275
Onions, green (incl. Arbagic)	2,807	562	3,369
Leeks	686	—	686
Garlic, green and dried	585	149	734
Horseradish	—	45	45
Mushrooms	—	1	1
Marrow (all kinds)	2,453	25	2,478
Vegetables	6,033	1,982	8,015
Watermelons	18,072	328	18,400
Olives	—	152	152
Walnuts	19	1,617	1,636
Lemons	—	842	842
Limes	55	18,538	18,593
Fruits	7,580	26,575	34,155
Canned goods	25	1,009	1,034
Tomato soup	—	56	56
Sugar	155	19,554	19,709
Honey	1	268	269
Marmalade	—	747	747
Halva	—	25	25
Pastries	4	939	943
Yeast cakes	73	23	96
Pepper	—	5	5
Salt	1	16,546	16,547
Soda	1	8,207	8,208
Vinegar	—	401	401
Coffee	—	11	11
Beer	81	5,307	5,388
Wine	5,465	45,932	51,397
Brandy	465	4,566	5,031
Alcohol	—	815	815
Various foodstuffs	—	1,144	1,144

TABLE XII.—CONSUMPTION OF CERTAIN FOOD COMMODITIES IN THE FIRST NINE MONTHS OF 1942 AND 1943*

(*Metric tons*)

Month	Edible oil		Sugar		Flour	
	1942	1943	1942	1943	1942	1943
January	1,381	1,864	5,133	5,421	32,050	24,428
February	646	2,280	10,641	6,673	28,273	24,438
March	1,802	2,974	7,798	7,837	34,884	28,263
April	1,608	2,156	2,602	5,007	29,649	21,855
May	2,058	2,073	1,309	3,561	31,325	22,592
June	8,600	2,329	4,524	8,452	30,558	22,620
July	1,700	2,385	8,458	8,096	31,817	23,891
August	1,768	2,653	5,977	3,118	32,903	42,593[a]
September	1,021	2,355	2,906	5,237	31,120	63,293[a]
Total	14,585	21,067	49,350	53,401	282,581	273,973

* Data from *Argus* (Bucharest), Dec. 2, 1943.

[a] The increase in flour consumption is due to the free sale of white flour.

TABLE XIII.—FOOD PROCESSED BY INDUSTRIAL ESTABLISHMENTS IN RUMANIA IN 1935*

(*Metric tons*)

Commodity	Production	Imports	Exports	Internal consumption
Wheat flour	540,123	—	91	540,032
Salami	38	—	5	33
Fish (canned)	668	302	—	970
Meat (canned)	261	—	22	239
Macaroni	3,803	8	—	3,811
Biscuits	935	4	3	936
Linseed oil	595	1	—	596
Sunflower seed oil	32,141	—	10,812	21,329
Rape oil	5,205	—	75	5,130
Canned vegetables	3,497	1	47	3,451
Mustard	288	3	—	291
Chocolate	2,043	1	—	2,044
Distilled alcohol	12,200	6	2	12,204
Rum, brandy	451	3	—	454
Champagne	121	1	—	122
Beer	46,576	—	—	46,576
Vinegar	946	—	—	946
Yeast	2,787	—	12	2,799
Sugar	121,676	3	—	121,679
Fruit preserves	75	—	—	75
Marmalade	82	6	51	37
Comfits	1,009	—	—	1,009
Candy	2,924	1	—	2,925

* Data from *Enciclopedia României*, III (Imprim. Natl., 1939), p. 990.

AGRICULTURE AND FOOD IN YUGOSLAVIA BEFORE, DURING, AND AFTER WORLD WAR II

By

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(Edited by S. D. ZAGOROFF and P. STANLEY KING)

INTRODUCTION*

Yugoslavia is the third largest Slavic state in both area and population, being exceeded only by the USSR and Poland. In the abundance and variety of minerals, the outstanding fertility of its soil in some localities, its forest resources in others, and the climatic advantages of yet others, Yugoslavia is one of the most richly endowed of European countries. It possesses every requisite for the development of any branch of agriculture, industry, and internal and foreign trade. In addition, its 15 million inhabitants are of strong, healthy stock, inured to adversity, full of energy and fresh creative forces, and persevering in the pursuit of a set goal, freedom-loving and independent.

Yugoslavia's weakness has always lain in the low level of education of its masses in some sections, but even more in the division of its population into ethnic groups, each with its own particular history, religion, national consciousness, and, to some extent, language, and each, therefore, tending to consider itself a separate people. This peculiarity of the Yugoslav population often stood in the way of the creation and consolidation of one state, and impeded the development of one common economic life.

During the last war separatist tendencies were clearly manifest and were encouraged by the enemy. The outstanding example was the secession of "Ustashi" Croatia and the brutal persecution of Serbians residing in that territory. On the other hand, during the war there originated in all parts of Yugoslavia partisan movements directed against the enemy occupants. True, even these movements did not entirely co-operate with each other: there evolved, on the one hand, the Nationalist movement under the leadership of Draža Mihajlović, and, on the other, the Communist movement headed by Josip Broz-Tito. After the victory of Tito's Communist partisans, supported by the Allies and the Red Army, all parts of Yugoslavia again became integrated into one state. Within this state, theoreti-

* The substance of this Introduction and chapters 1–3 was prepared for the University of California Institute of Slavic Studies, in manuscript, under the title of "The Economic Plans of Slavic States as Compared with the Five-Year Plans of the Soviet Union—Comparative Analysis of the Soviet Yugoslav, Polish, Bulgarian and Czechoslovak Economic Plans." The Institute has granted its permission to publish this material.

cally founded upon federative principles, all nationalities inhabiting it are actually subordinated to the dictatorship of the Communist party of Yugoslavia (CPY). However, even this new subordination merely silenced but did not do away with the differences existing among the component parts of the Yugoslav population. Lately, the situation has been further complicated by the discord which arose in June 1948 between the CPY and the Cominform, and the efforts of Moscow to overthrow Tito, which introduced differences within the ranks of CPY.

In the event Yugoslavia were to adopt a truly democratic regime, the initial stages would, most probably, see the accentuating of nationalistic centrifugal forces. However, circumstances might develop in such a way that the economic and political centripetal forces would win out and preserve the wholeness of the Yugoslav state.

In the period between the two world wars the common national economy of Yugoslavia developed at a fast rate despite the work of centrifugal forces. By the beginning of World War II it had achieved a fairly high level. Production was adequate for the support of the population—although on a modest scale and not uniformly in all localities nor in every stratum of the population—and for the export of considerable amounts of various foodstuffs.

POPULATION

At the beginning of World War II Yugoslavia covered an area of 247,542 square kilometers. In this territory there lived, in 1931, 13.9 million people, of which 6.9 million were males and 7.0 million females according to the census of that year. From the first census of January 30, 1921 to March 31, 1931 the population increased from 12.0 to 13.9 million, i.e., by 1.9 million, or 16.3 percent. This means an average annual increase of over 1.5 percent. By December 31, 1940 the Yugoslav population was estimated at 15.9 million (*1*, p. 84).

Assuming an average annual increase of .2 million (equal to the actual average annual increase in 1931–40), the Yugoslav population on the old territory should have amounted on June 30, 1946, if there had been no wartime losses, to about 17.0 million. In fact, it decreased by that time to 14.8 million (official midyear estimate for 1946; *2*; *3*, p. 13). Thus the loss in population caused by war—through increased death rates and diminished birth rates—amounted to about 2 million people. By 1948, according to the new census taken in March of that year on the new, somewhat enlarged territory, the population had reached 15.75 million (*4*).

The density of the population amounted in 1931 to 56.3 inhabitants per square kilometer. The most densely populated territories were the fertile Danube banovina (the former province of Vojvodina) with 76.4 inhabitants per square kilometer, and the industrial Drava banovina, or Slovenia, with 72.9. The least densely populated were the Vardar banovina, or south Serbia and Macedonia, with 42.9 inhabitants per square kilometer, and particularly the Zeta banovina, or Montenegro, with 29.9. In general, the density of population increased from south to north. From 1921 to 1931 the geographical center of the population (in Bosnia) moved by 5 kilometers toward the east, indicating that the population of the eastern parts of Yugoslavia had grown faster than that of the western parts (*5*, p. 18).

The great majority of the population was rural—12.0 million or 86.1 percent in 1931, as compared with an urban population of only 1.9 million or 13.9 percent. This is explained by the predominance of agriculture and the low development of industry. The agrarian character of prewar Yugoslavia is confirmed by the following distribution of the population in 1931 according to occupation (*1*, pp. 20–31):

	Male	Female	Total		Active		Dependents
	(*million*)	(*million*)	(*million*)	(*percent*)	(*million*)	(*percent*)	(*million*)
Agriculture, animal husbandry, forestry, and fishing	5.2	5.5	10.7	77.0	5.1	76.1	5.6
Industry and handicrafts	.8	.7	1.5	10.8	.7	10.4	.8
Commerce, banking, and communications	.4	.3	.7	5.0	.3	4.5	.4
Public services, liberal professions, army	.3	.2	.5	3.6	.3	4.5	.2
Other professions, nonprofessionals, and unknown	.2	.3	.5	3.6	.3	4.5	.2
Total	6.9	7.0	13.9	100.0	6.7	100.0	7.2

The active (earning) population formed 6.7 million, or 48.2 percent of the total population, the nonactive members of families (dependents) 7.2 million, or 51.8 percent; 76.1 percent of the active population were occupied in, and 77.0 percent of the total population were supported by agriculture, animal husbandry, forestry, and fishing; 10.4 and 10.8 percent respectively were working in and supported by industry and handicrafts. Commerce, banking,

and communications accounted for 4.5 and 5.0 percent of the active and total population, and the public services, liberal professions, and army for 4.5 and 3.6 percent. Finally, 4.5 and 3.6 percent were unidentified as to occupation.

The population dependent on agriculture and animal husbandry amounted to 10,627,355; with forestry and fishing the total was 10,670,565. Of 5,099,000 active population employed in these combined occupations, 5,083,000 were occupied in agriculture and animal husbandry; furthermore, one of the chief branches of industry was the agricultural and food industry, which received raw materials from agriculture. Agriculture, including animal husbandry, was, therefore, the main sector of the prewar Yugoslav economy, engaging and supporting over three-fourths of the entire population of the country.

THE PREWAR AGRARIAN REFORM

The social inequality, which in the eminently agrarian Yugoslavia was connected with an uneven land distribution and the remnants of feudal relations, had already lessened in the period between the two wars. This had been achieved by the prewar agrarian reform consisting of the Manifesto of the Regent Alexander I of January 6, 1919, the preliminary decrees for the preparation of the Land Reform of February 25, 1919, approved by the Constitution of June 28, 1921, and later decrees. In Serbia the feudal relations disappeared in the nineteenth century, and a great majority of the peasants became owners of the land which they cultivated (on agrarian reforms in Yugoslavia and the other Danubian countries see also the General Survey, chapter 3).

In Dalmatia the land reform abolished the old colonate relations, and about 50,000 hectares of land were distributed among 97,000 farmer tenants (*coloni*). The landowners received compensation for their relinquished land in the amount of 400 million dinars. In Macedonia the Turkish feudal relationship (*tchiflik* system) was abolished and the tenants on feudal estates were proclaimed free owners of the land which they cultivated. The landowners were to receive 300 million dinars in state bonds as compensation for their land, but up to 1935 they had received only 80 million. In Bosnia and Herzegovina all feudal relations (serfdom in the form of the *kmet* system) were dissolved. Some 113,000 peasant families received 566,000 hectares of kmet land, 15,000 families were to receive 400,000 hectares of manor land (*begluk*), and 82,000 fami-

lies 110,700 hectares of state-owned land. Thus, a total of 210,000 peasant families were to receive 1,076,700 hectares of land (however, up to 1934 only 166,200 families were allocated 885,900 hectares). The Moslem landowners were to receive a compensation in the amount of 250 million dinars for the kmet land and 500 million for the begluk land, for which a special state loan was floated. Finally, in the Vojvodina, Croatia-Slavonia, and Slovenia, where a considerable percentage of the land belonged to the large Hungarian and German estates, all estates of 100 hectares and up were proclaimed as subject to expropriation and distribution among war volunteers and land-poor or landless farmers. The total of this land was estimated at over 2 million hectares, but not all these expropriations were carried out to the degree promised in 1919.

The area of expropriated and parceled land and number of beneficiaries in the various parts of Yugoslavia were as follows up to 1934 (*6*, p. 26):

Provinces	Thousand hectares	Thousand families
Slovenia	16.6	15.9
Croatia-Slavonia	150.3	111.1
Vojvodina	193.3	111.1
Bosnia-Herzegovina	885.9	166.2
Dalmatia	50.0	97.0
South Serbia (Macedonia)	327.3	34.4
Total	1,623.3	535.6

Since an average peasant household or family can be assumed at 5.3 persons, the above colonized 535,600 families represented about 2.85 million colonized persons.

It must be mentioned, as being of importance for the agrarian relationships in Yugoslavia, that in some parts there existed in the past the peculiar institution of the Serbian and Croatian family community called *zadruga*,[1] i.e., a joint family. This was a huge family, numbering at times over 100 members, with common family ownership of the means of production. Under the influence of the individualistic civil laws (Code Napoléon) in Austria-Hungary and Serbia, as well as the development of monetary and market economy in Yugoslavia, this archaic institution gradually all but disappeared, although remnants of it are to be found even today.

[1] Since zadruga means literally a group of people working together, the term was used in the Yugoslav legislation to indicate "co-operative" as a form of economic association.

Another peculiarly Serbian institution was the protected minimum of peasant immovable and, to some extent, movable property which could not be attached for nonpayment of debts. This institution, called *okućje*, was established by law in 1836, extended to movable property by the law of 1865, confirmed in relation to the payment of taxes by the decree of 1928, and repeated by the decree of autonomous province (banovina) Croatia of October 17, 1939.

Despite the prewar land reform there remained in Yugoslavia some large estates up to the war. In 1931 the number of holdings of various sizes and their areas were as follows (7, pp. 86–87):

Size of holdings (*hectares*)	Number of holdings		Area		Average size (*hectares*)
	(*1,000*)	(*percent*)	(*1,000 ha.*)	(*percent*)	
Up to 0.5	158.9	8.0	43.4	0.4	0.27
0.5–1.0	175.5	8.8	135.8	1.3	0.78
1–2	337.4	17.0	514.4	4.8	1.53
2–5	676.3	34.0	2,287.6	21.5	3.38
5–10	407.2	20.5	2,873.2	27.0	7.06
10–20	174.1	8.8	2,380.8	22.3	13.10
20–50	49.3	2.5	1,388.6	13.0	28.16
50–100	5.2	0.3	338.1	3.2	65.02
100–200	1.1	0.1	147.9	1.4	134.5
200–500	0.5	0.025	146.5	1.4	293.0
Over 500	0.2	0.010	389.8	3.7	1,949.0
Total	1,985.7	100.0	10,646.0	100.0	5.36

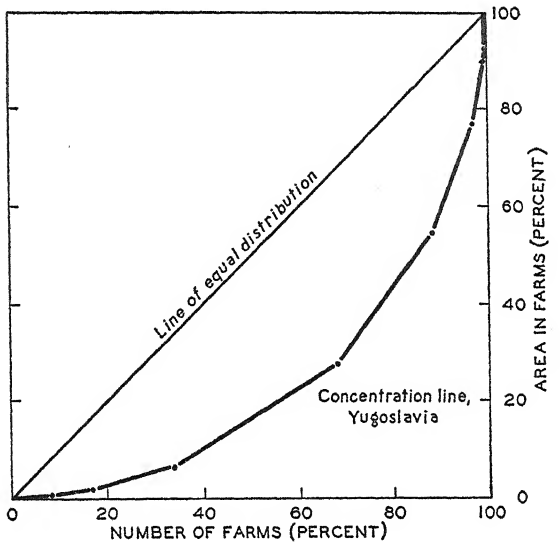
If, on the basis of these data, we were to build a *concentration curve* (called the Lorenz curve after the American statistician who introduced it in the study of the concentration of incomes), we would get the following curve deflecting from the *straight line of equal distribution* (see chart). The concentration index R may be computed according to the following formula (8, pp. 471–76):

$$R = 1 - \frac{\sum_{i=1}^{m} f_i (Q_{i-1} + Q_i)}{F_m \cdot Q_m}$$

where

m is the number of groups of holdings (in our case $m = 11$);
i is the ordinal number of each group (1,2...11);
f_i is percent of the total number of holdings in each group ($f_1 = 33.8$, $f_2 = 34.0 \ldots f_{11} = 0.01$);
Q_i is the cumulated percentage of the total area belonging to all

LORENZ CURVE FOR FARMS IN YUGOSLAVIA, 1931



groups up to the i group ($Q_0 = 0$; $Q_1 = 0 + 0.4$; $Q_2 = 0.4 + 1.3 = 1.7$; $Q_3 = 1.7 + 4.8 = 6.5\ldots$);

F_m is the cumulated percentage of the total number of holdings in all m groups ($F_m = 100$);

Q_m is the cumulated percentage of the total area belonging to all m groups ($Q_m = 100$);

R is the relation of the area lying between the line of the equal distribution and the concentration line to the area of the triangle.

In our case, $R = 1 - 0.45 = 0.55$, which gives us a relatively low index of land concentration, assuming that in Yugoslavia land property and land exploitation generally coincided. Therefore, after the introduction of the prewar agrarian reform the main economic and food difficulties of Yugoslavia lay not in the excessive concentration of land, since only 9.7 percent of the entire cultivated area belonged to farms averaging over 50 hectares;[2] on the contrary, the chief difficulty was a consequence of the relative rural *overpopula-*

[2] Of the entire area of these holdings—1,022.3 thousand hectares—367.6 thousand hectares or 36 percent were under forests, and of the 389.8 thousand hectares belonging to units with over 500 hectares the area under forests was 211.4 thousand hectares, or 54 percent, with the area in arable land merely 47.5 thousand hectares, that in meadows 14.9 thousand, and in pasturages 86.5 thousand hectares.

tion and the extreme *pulverization* (splitting up) of peasant property. There were 158.9 thousand holdings with areas up to .5 hectare; 175.5 thousand with .5 to 1 hectare, and 337.4 thousand holdings with 1 to 2 hectares; i.e., a total of 671.8 thousand holdings with about 3.4 million persons who could not be supported by their farms and were forced to obtain a great part of their income from other sources. These sources, however, were inadequate because of the poorly developed industry. This was the principal cause of misery and pauperism of the Yugoslav rural population.

THE PREWAR CO-OPERATIVE MOVEMENT

In the life of Yugoslavia, as in all other Slavic countries, one of the greatest factors in its credit and trade turnover, and especially in all branches of its agriculture, was the co-operatives. Beginning with the ancient Serbian and Croatian family communities, co-operatives were deeply rooted in the life pattern of the Yugoslav people, especially because Yugoslavia was a country of small peasant holdings. It is therefore impossible to study the agricultural and food conditions in Yugoslavia without touching on the co-operative movement and its forms. The co-operatives played a very important part in the economic life of prewar Yugoslavia. The country people visited co-operatives not merely for the sale of their produce but also to obtain cheap credit and to buy the necessities of life.

The different co-operative laws (Serbian for Serbia, Austrian for Slovenia and Dalmatia with a special law for Bosnia and Herzegovina, and Hungarian for Croatia and Vojvodina) were unified by the new Yugoslav co-operative law. The co-operatives were united in a General Co-operative Union. A special co-operative union was established in accordance with the provisions of the law on agricultural credit of June 12, 1925. The number of co-operatives and their members as well as their balance and their total turnover increased as follows (*1*, pp. 316–32):

	Number of co-operatives	Members (*thousands*)	Total assets (*million dinars*)	Total turnover (*million dinars*)
1925....	3,971	...	1,009.4	...
1930....	6,735	784.0	3,577.6	...
1935....	8,738	982.6	3,297.3	...
1936....	9,094	1,038.7	3,468.2	9,238.9
1937....	10,144	1,329.0	3,603.6	9,124.2
1938....	10,832	1,414.9	3,655.8	9,903.2
1939....	11,227	1,609.2	...	...

The number of persons participating in the co-operatives was smaller than the figures indicate, since one person was registered as a member in several co-operatives. On the other hand, each member represented on an average a household of about 5 persons. Therefore it can be said that on the eve of the war about one-third of the total population was participating in the co-operative movement.

In 1938 the co-operatives were divided by kind as follows (*1*, pp. 316–32):

Kind of co-operative	Number of co-operatives	Registered members (*thousands*)	Total turnover (*million dinars*)
Credit	4,912	552.0	5,837.7
In villages	4,146	418.0	4,898.9
In towns	766	134.0	938.8
Producers' supply and consumers	2,521	330.0	1,820.1
Stock breeding and poultry raising	765	22.5	201.3
Land[a]	345	16.7	41.2
Vine growing and wine	255	10.9	177.4
Dairy and cheese-making	237	14.6	88.5
Insurance	182	33.3	625.8
Grain producers	169	12.2	297.0
Craftsmen and workers	156	10.0	431.6
Sanitation	126	65.6	14.9
Building and housing	124	8.1	77.6
Various agricultural and other	1,040	41.0	290.2
Total	10,832	1,117.1[b]	9,903.2

[a] Mainly for renting land.

[b] This figure includes only the members of 7,878 co-operatives which filed their reports with co-operative unions.

With the exception of the urban credit co-operatives, craftsmen's and workers' co-operatives, and some of the consumers', insurance, sanitation, and building co-operatives, the co-operatives were agricultural and peasant co-operatives.

In 1939 there existed the following co-operatives among the agricultural and other rural co-operatives:

Beekeeping	125
Fruit-growing	103
Rosemary production	22
Other production and sales	127

Fishing	110
Machine (for collective buying and using agricultural machinery)	73
Electric power stations	65
Meadow and pasturage	53
Oil	43
Water supply	42
Others	250
Total	1,013

With regard to this highly developed co-operative network it must be said that it permitted the peasant households to obtain cheap credit, supplied them with all kinds of consumers' and economic necessities, breeding stock, fertilizers, seeds, electric power, water, etc., and even assisted them in renting land on easier terms, purchasing and using farm machinery, processing agricultural produce (such as milk into cheese and butter, grapes into wine, olives into olive oil, meat into canned meat products, etc.), and in organizing the sale of these products. However, crop production and stock-breeding in themselves remained *individual* endeavors showing no tendency toward turning into *collective* activities. Even jointly rented arable land and meadows were allocated among individual households, and only pasture land and, at times, forests and possibly meadow lands, which were difficult to portion off, were used jointly. In general, the *individual* household remained as a nucleus, becoming more or less crusted over by the co-operative shell embracing all auxiliary branches of rural economy and protecting it in the capitalist high seas of trade and credit. The creation in postwar Yugoslavia of collective economic organizations in the form of "peasant working co-operatives" (kolkhozi) denoted, therefore, the transition of agricultural co-operatives to a new way of existence, entirely out of line with the prewar free co-operative movement.

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CHAPTER 1

AGRICULTURE BEFORE THE WAR

CROP PRODUCTION

In 1939, of 24.75 million hectares of the total area of Yugoslavia, 14.57 million hectares, or 58.9 percent, were used for agriculture; the remainder was covered with forests (8.18 million hectares or 33.0 percent), or represented noncultivated land (2.00 million hectares or 8.1 percent). However, about 1 million hectares of forest land were covered with scrub, which represents a transition stage between forest and barren land and, like the forests proper, served as rather poor pasture.

In the period from 1924–28 to 1939 the distribution of the land used for agriculture changed as follows:[1]

	Million hectares				Percent	
	1924–28	1929–33	1934	1939	1924–28	1939
Arable land	6.2	7.1	7.4	7.61	53.9	52.2
Pastures	2.8	4.1	4.3	4.29	24.3	29.5
Meadows	1.7	1.8	1.8	1.87	14.8	12.8
Orchards	.3	.2	.3	.30	2.6	2.1
Vineyards	.2	.2	.2	.22	1.7	1.5
Gardens	.1	.1	.1	.15	.9	1.0
Marshes	.2	.2	.1	.12	1.7	.8
Total	11.5	13.7	14.2	14.57	100.0	100.0

The table shows a systematic growth of the land used for agriculture which took place at the expense of the noncultivated areas and the forests. The greatest increases were in arable land and pastures, but arable land, which accounted for more than one-half of the total area used for agriculture, declined slightly in relation to total, whereas the proportion of pastures went up. The area of meadows increased a little absolutely, partly at the expense of marshes, but its percentage decreased from 14.8 to 12.8. The area of other kinds of land used for agriculture covered with intensive cultures was very small and, with the exception of gardens, decreased

[1] Data in this section are largely from the following sources: *1*, pp. 154–71; *2*, p. 374; *3*, p. 21; *4*; *5*; *6*; *7*; *8*.

in percentage. All this denotes a rather low level of agriculture and primitive methods of animal husbandry. The following distribution of arable land among various crops is similarly revealing:

	Million hectares				Percent	
	1924–28	1929–33	1934	1939	1924–28	1939
Cereals	5.1	5.9	6.0	6.24	82.3	82.0
Vegetables	.4	.4	.5	.43	6.4	5.7
Fodder	.3	.4	.3	.36	4.8	4.7
Industrial plants	.1	.1	.1	.20	1.6	2.6
Fallow	.3	.4	.5	.38	4.8	5.0
Total	6.2	7.1	7.4	7.61	100.0	100.0

Almost the whole increase of arable land fell upon the area sown to cereals, which represented over 80 percent of the total arable land. The area sown to industrial plants, though it doubled from 1924–28 to 1939, was far less than that lying fallow.

According to the general pattern of land use, Yugoslavia includes three major zones as follows:

1. From the northern part of Slovenia along the Drava and Sava valleys to the Vojvodina (along the Danube) and Serbian Shumadija lie the most productive lands, largely devoted to cereal growing with associated cattle, pig, and horse breeding; here the percentage of farmlands in meadows and rough pasture is usually under 20.

2. West and south of this zone lies a region where the raising of livestock, mainly sheep and goats, based on grazing, is the predominant occupation of the peasants.

3. Between the abrupt Karst edge and the Adriatic is the Mediterranean littoral, characterized by vineyards and orchards as well as some poor pasture for sheep and goats.

The wide differences in the agricultural structure of these zones create great variations in food supplies for the population.

Cereals.—The most important cereals produced in Yugoslavia are wheat and corn; less important are barley, rye, and oats. Crop and trade data for these grains in 1937–39 are given in Table 1.

In 1921 the area sown with wheat was only 1.5 million hectares; by 1929 it had increased to 2.1 million and remained about at this level despite the agricultural world crisis. Moderate expansion subsequently brought the area to 2.3 million hectares in 1939. Production rose from 14.1 million quintals in 1921 to 25.9 million in 1929, but fell to 14.5 million in 1932. In 1938 it reached a

TABLE 1.—YUGOSLAVIA: GRAIN CROPS, TRADE, AND APPARENT CONSUMPTION, 1937–39*

(*Million hectares; quintals per hectare; million quintals*)

Year	Area sown	Yield per hectare[a]	Production	Net exports	Apparent consumption
		WHEAT			
1937.....	2.2	11.0	23.5	3.2[b]	20.3
1938.....	2.2	14.2	30.3	1.1[b]	29.3
1939.....	2.3	13.05	28.8	2.1[b]	26.7
		CORN			
1937.....	2.8	19.8	53.4	7.3	46.1
1938.....	2.8	17.3	47.6	4.7	42.9
1939.....	2.8	15.1	40.5	.9	39.6
		BARLEY			
1937.....	.43	9.2	3.83	.11	3.72
1938.....	.42	10.1	4.21	.00	4.21
1939.....	.42	10.2	4.24	(.01)[c]	4.25
		RYE			
1937.....	.26	8.2	2.09	.09	2.00
1938.....	.26	9.0	2.27	.01	2.26
1939.....	.26	9.4	2.44	.00	2.44
		OATS			
1937.....	.36	8.6	2.95	.09	2.86
1938.....	.37	9.0	3.27	.00	3.27
1939.....	.37	9.8	3.48	.00	3.48

* Data from Yugoslavia, Statistique générale d'état, *Annuaire statistique, 1940* (1941), pp. 156–57, 236; and Internat. Inst. Agr., *International Yearbook of Agricultural Statistics, 1940–41* (Rome, 1941).

[a] Based on area harvested.

[b] Not including flour.

[c] Net import.

peak of 30.3 million quintals. With 1–3 million quintals exported, and after deductions for seed, feed, etc., there remained, in the decade before the war, from 12 to 20 million quintals of wheat per year for human consumption, or approximately .8–1.3 quintals per capita.

The most important wheat-producing districts of Yugoslavia are the Vojvodina and Slavonia (part of Croatia) which produced almost 70 percent of the total wheat crop. The Vojvodina alone supplied about 50 percent of the total. Yugoslav wheat is of excellent quality, weighing 76–82 kilograms per hectoliter. The grain is large and contains a high percentage of protein and gluten. The wheat of Bachka contains 39 percent of protein, that of Begej 38 percent, and the wheat of Serbia and Bosnia 36–38 percent. The protein is

quite dry and very elastic, which makes Yugoslav wheat suitable for the making of fine and superfine flours. The beautiful yellow color of this flour is due to the high content of gluten. Bread made of this flour has a very agreeable aroma and taste. For all these qualities the Yugoslav wheat is considered the best in Europe and can be compared only with that of Manitoba.

Corn is especially important in Yugoslavia since it is used as food for both humans and livestock. Before World War II Yugoslavia occupied third place among the corn producers of Europe, following the USSR and Rumania. In 1933 the production of corn in these countries was as follows: the USSR, 4.8 million tons; Rumania, 4.6 million; and Yugoslavia, 3.6 million. In 1934 the Yugoslav production was greater than that of Rumania and even surpassed the average production of the USSR. Since the separation of Bessarabia from Rumania after the war, Yugoslavia has occupied second place among the European producers of corn.

The area sown to corn, which was slightly larger than that in wheat, increased steadily up to 1937. Both the yield per hectare and production were in certain years double those of wheat; the yield fluctuated between 13.4 (1931) and 19.8 (1937) quintals per hectare, and production between 33 and 53 million quintals. Considerably larger also was the export of corn prior to 1939. In the last years preceding the war the domestic utilization of this cereal amounted to 40–46 million quintals, of which probably 22–30 million quintals, or approximately 1.5–2 quintals per capita, were consumed by the human population.

The third in importance of the cereals cultivated in Yugoslavia is *barley*, with an area of 0.4 million hectares and production of 4.2 million quintals in 1939. A portion of this crop was used for beer, but the indigenous barley does not have all the qualities desirable for brewing and the Yugoslav breweries were obliged to obtain a part of their required amounts from abroad. Assuming that the net human consumption of barley amounted to 2.0–2.2 million quintals, we arrive at the approximate figure of .13–.15 quintal average consumption of barley per capita.

Yugoslavia produced little *rye* compared with certain northern countries. The output was used mostly within the country, and exports were insignificant. Both production and consumption of rye were far smaller than those of other bread cereals, but they were more constant. Human consumption was, probably, about 1.5 million quintals, or .1 quintal per capita.

The production of *oats* was slightly smaller than that of barley. The domestic consumption of this feed cereal was equal to its production because the export was negligible.

Before World War II Yugoslavia experimented with the growing of *rice* in the valley of the river Vardar. In the period from 1929 to 1939 the area sown with rice increased from around 1,600 to 3,800 hectares, the yield per hectare fluctuated between 7.4 and 19.9 quintals per hectare, and the production increased from 21,500 to 71,400 quintals. The production was insufficient for domestic needs, and Yugoslavia imported 222.3 thousand quintals of rice in 1938 and 178.8 thousand quintals in 1939. The total consumption of rice amounted, in the last prewar years, to ¼ million quintals, which represented an average of about 2 kilograms per capita per year.

The average prewar annual human consumption of all cereals can be approximately estimated as 2½–3½ quintals per capita, according to the size of the harvest. In different parts of the country and among different social classes there were significant deviations from these average figures.

Food crops other than cereals.—As regards the production of *leguminous vegetables*, especially haricot beans, Yugoslavia held a very important place. Yugoslav *haricot beans* are of excellent quality, particularly the *Tetovac* beans grown around the town of Tetovo. These beans represented an important article of food of the population and varying quantities were exported (439,620 quintals in 1937; 273,500 in 1938; 126,460 in 1939). *Paprika* also played an important role in the diet of the population and some was exported (1–2 thousand quintals), but a small quantity of processed paprika was also imported (0.2–1.0 thousand quintals).

The area and production of leguminous vegetables and paprika in 1937–39 are shown in the following tabulation (in thousand hectares and thousand quintals; *1*, pp. 162–63):

Crop	1937		1938		1939	
	Area	Production	Area	Production	Area	Production
Haricot beans ...	31.4	1,549.3	30.9	1,141.1	31.4	981.8
Other beans	3.7	62.2	3.5	41.4	3.8	46.0
Peas	4.6	63.5	4.7	63.7	4.9	58.6
Lentils	3.0	29.7	2.4	16.3	2.1	16.1
Paprika	9.8	234.5	9.2	295.9	9.9	240.1

The total production of these vegetables amounted in good years to 1.8–1.9 million quintals, or over 10 kilograms per capita.

The conditions for growing other kinds of vegetables were also favorable and their production generally increased in the interwar period. *Cabbage*, a valuable article of food for the winter, occupied a sown area of 34,900 hectares in 1939, and production amounted to 2.4 million quintals. The production of *onions* varied between .7 and .8 million quintals prior to the war, and some small seed onions were exported. In 1939 the production of *tomatoes* amounted to .50 million quintals, and that of *melons and watermelons* to 1.7 million.

Of *roots and tubers* the most important item was *potatoes*, the area of which was quite stable in the last years before the war, as the following tabulation indicates (*1*, p. 161):

Year	Area (*1,000 ha.*)	Yield per hectare (*quintals*)	Production (*million quintals*)
1937.....	.27	61.9	16.2
1938.....	.27	63.9	17.1
1939.....	.27	52.1	13.8

Assuming that roughly one-half of the potatoes produced were used for food, human consumption amounted to little more than one-half quintal per capita. Only in a few parts of Yugoslavia, where production was fairly well developed, did potatoes serve as a significant complement to cereals and other vegetable food. A small quantity of early potatoes was imported from Italy.

Of industrial crops Yugoslavia produced *sugar beet*, *tobacco*, *hops*, *hemp*, *flax*, and even *cotton*, as well as *chicory*, *pyrethrum*, *poppy* (opium), and various medicinal plants. Of the above only sugar beet is important as a foodstuff. Hops could have been important for brewing, but owing to a low consumption of beer the greater portion of the output was exported. Yugoslav hops from Slovenia (Žatec) and Vojvodina (Bački Petrovac) have been known for a long time in the world markets, although not always under the name of their country of origin, since Yugoslav hops were often resold under another name.

The area, yield, and production of *sugar beet* in the last prewar years were as follows (*1*, p. 158):

Year	Area (*1,000 ha.*)	Yield (*quintals per ha.*)	Production (*million quintals*)
1937.....	21.2	192.6	4.0
1938.....	29.4	190.7	5.6
1939.....	47.1	200.0	9.2

The cultivation of sugar beet was concentrated around sugar factories, of which prewar Yugoslav possessed 9. More than half of these factories were located in the Vojvodina. The production of sugar beet and sugar decreased after the agricultural crisis, but in 1938 and 1939 they again increased. Until 1926 Yugoslavia imported sugar, but after that year it became a sugar-exporting country; after the crisis the exports of sugar stopped. Even so, per capita consumption of sugar was rather low—around 7.5 kilograms a year.

Fruits.—The cultivation of fruit trees was a very important branch of prewar Yugoslavia's agriculture (*4*, pp. 68–76). Yugoslavia produced a wide variety of fruit. The soil and the climate were both particularly suitable for prunes, apples, nuts, grapes, and, in the Mediterranean zone, olives.

The *Požegača plum* (prune) is the variety principally grown in Yugoslavia. It is somewhat smaller than the prunes of California and France, but its taste and sugar content are even superior to the above varieties. Unfortunately, the prune orchards are rather poorly cared for, and many of them are infested with disease and insect pests. Both the number of trees and the harvest of prunes in the 1930's were far below those of the 1920's. Production and trade data for 1937–39 are given in the following tabulation (million trees and million quintals; *1*, pp. 166, 237):

Year	Number of trees	Production	Exports	
			Fresh	Dried
1937.....	41.9	2.1	.1	.1
1938.....	42.7	3.0	.2	.1
1939.....	43.8	12.2	.3	.4

Some prunes were exported in the form of jam. Domestic use for food either in fresh or dried form, or as marmalade (*pekmez*), was small. The greater part of the crop was made into prune brandy (*slivovica*).

Apples were next in importance to prunes, with some 8–9 million trees and crops of 1.1–2.7 million quintals in the last years before the war. *Pear* trees numbered 4.4–4.7 million, and the crop ranged from .3 million to .7 million quintals.

The cultivation of *cherries* was developed in Vojvodina (Subotica, Vršac, Bela Crkva), Herzegovina (Mostar), and Dalmatia. In 1939 there were 2.1 million cherry trees and the production amounted to .4 million quintals.

In Dalmatia there was grown a special kind of sour cherry

(*maraska*) which was used for making a liqueur (maraschino). In the United States the juice of the maraska was used for the manufacture of various refreshing drinks. Dried maraska was exported to Italy and re-exported from that country to the United States. The world depression lowered this export and the production of this variety of cherry. Production amounted to 28,600 quintals in 1925, to 14,700 in 1929, and to 9,400 in 1934.

Yugoslavia had 2.8 million *walnut* trees in 1939 with a crop of 525,000 quintals of walnuts, and a million *chestnut* trees with a crop of 144,000 quintals.

Olives played a very important role in the Adriatic coastal regions, forming an important article of food in those districts, where olive oil was used in the place of animal fats and other vegetable oils. Some 3,400 quintals of olive oil were exported in 1939, but there were also occasional small imports from Italy. The number of trees was quite stable at around 4.7 million; oil production in the three years before the war was as follows (in thousand hectoliters; *1*, p. 168):

1937	80.1
1938	68.5
1939	65.7

Up to 1932 Yugoslavia imported larger quantities of olive oil than were exported, but from 1934 on the exports exceeded imports. During the last prewar years the consumption of olive oil within the country amounted approximately to 6.5 million liters; about double that amount of other vegetable oils was also produced and consumed, so that the consumption of all sorts of vegetable oils totaled roughly 19.5 million liters, or, by weight, about 17 million kilograms. The average annual consumption per capita was about 1⅓ liters.

The area of *vineyards*, and the production and exports of *wine* and *grapes* were as follows in the last years before the war (*1*, p. 167; *9*, pp. 257, 289):

Year	Area of vineyards (*1,000 ha.*)	Production		Exports	
		Grapes (*1,000 quintals*)	Wine (*1,000 hl.*)	Grapes (*1,000 quintals*)	Wine (*1,000 hl.*)
1937	214.8	4,826.0	2,903.0	27.7	16.2
1938	218.6	7,952.0	4,672.0	37.9	26.1
1939	223.0	7,778.0	4,738.0	32.6	101.2

The area of vineyards increased steadily during the 1930's, but the production of wine fluctuated considerably. As compared with

production the exports of wine and grapes were insignificant because Yugoslavia had no established markets.

Fodder plants.—The cultivation of *fodder plants* was poorly developed, in keeping with the backward methods of Yugoslav livestock breeding; in many parts of the country the meadows and pastures supplied the chief amounts of hay. The cultivation of grass was conducted on a relatively small scale. The production of hay in fields and meadows was as follows (in million quintals; *1*, pp. 164, 166):

Year	Field hay[a]	Meadow hay[b]
1937	8.5	34.5
1938	8.5	31.8
1939	8.3	28.3

[a] Clover and alfalfa.
[b] The product of "permanent meadows" in the terminology of the International Institute of Agriculture.

In summing up the above data on agriculture in Yugoslavia during the prewar years, it may be said that the absolute agricultural production was both large and varied. Also the relative average production per capita not only was adequate for the feeding of the population but gave a surplus for export. However, the supplies of agricultural products were very unevenly distributed among various parts of the country. While the Vojvodina and the greater parts of Croatia and Serbia usually had a surplus of food crops, Herzegovina, Macedonia, Dalmatia, Montenegro, and parts of Slovenia, Croatia, and Serbia were deficit or "passive" areas and received their food from the surplus regions.

Of course, the same cultivated area could have yielded a far larger absolute and relative production had the level of Yugoslav agriculture not been so low. The following tabulation summarizes the yields of cereals, potatoes, and sugar beet before the war (quintals per hectare):

	1934–38	1939		1934–38	1939
Wheat	11.4	13.05	Rye	8.2	9.4
Corn	17.6	15.0	Potatoes	62.0	52.1
Barley	9.6	10.2	Sugar beet	187.9	200.0

These yields are far below those possible in countries of a higher level of agriculture. Of course, the yield per hectare represents only one aspect of agricultural productivity. For example, in 1936 and 1937 the yield of wheat per hectare in Yugoslavia averaged 12.1

quintals, 21.9 in Germany, and 27.1 in Denmark, whereas in the United States as a whole it was only 8.9 quintals and even less in the western states (*9*, p. 11). This, however, does not mean that agriculture in the United States is less productive. It is more productive in its other aspects. Hans von der Decken (*10*, p. 76) has this to say about the yield per area unit as a criterion of agricultural productivity: "This criterion means something only for countries such as Germany, Holland, etc., where the food area is limited and the aim of production lies, therefore, in the highest *yield per area unit.* In countries possessing larger food areas, as for instance United States and Canada, agriculture tends to reach the highest *yield per labor unit.* The United States and Canada in this respect surpass Germany and Holland while the opposite picture exists in respect to the yield per hectare."

For Yugoslavia with its agrarian overpopulation the criterion of yield per hectare is important. Besides, even the yield per hectare varied considerably in the different parts of Yugoslavia. Vojvodina in 1934–38 and 1939 had wheat yields of 13.7 and 15.2 quintals per hectare and corn yields of 23.5 and 21.5 quintals, while Macedonia got only 8.4 and 10.8 quintals of wheat and 10.5 and 8.1 quintals of corn.

Moreover, the supply of agricultural products was uneven in more aspects than the strictly geographic one. It was uneven also from the social standpoint. While the wealthy strata of the urban population could afford to buy abundant quantities of all sorts of vegetable foodstuffs and the richer farmers had a surplus of cereals and other products which they sold in the domestic market and supplied for export, the poor classes of the population could not obtain even the necessary minimum, and the broad masses of poor peasants were obliged to buy bread from Christmastime on, while landless households had, generally speaking, no bread of their own production.

ANIMAL HUSBANDRY AND FISHING

The early settlements of Yugoslavia, especially the ones lying in mountain districts, were devoted to animal husbandry rather than agriculture. The territories later incorporated, in particular the low-lying Vojvodina, annexed from Hungary, were predominantly agricultural with more intensive methods of culture, while livestock breeding, also conducted much more intensively, played an auxiliary role. The mountain districts have up to the present time preserved

their original character, being devoted chiefly to primitive, in some cases even nomadic, methods of animal husbandry.

In 1937–39 the numbers of livestock were as follows (in millions; *1*, pp. 170–71):

	Horses[a]	Cattle[b]	Sheep	Goats	Pigs	Poultry
1937.....	1.39	4.21	9.91	1.90	3.18	21.6
1938.....	1.41	4.31	10.14	1.89	3.45	22.7
1939.....	1.42	4.26	10.15	1.87	3.50	22.4

[a] Including donkeys and mules, numbering slightly over 140,000.
[b] Including buffaloes, numbering about 36,000 to 38,000.

In the decade before the war the number of horses increased but slightly, which may be in part explained by a wider distribution of motor vehicles. The number of goats also remained unchanged. Cattle, sheep, pigs, and poultry, on the other hand, increased considerably. However, the numbers of both horses and cattle per hectare of arable land were quite low. Thus, in 1939, there were only .17 horse and .56 head of cattle per hectare of arable land, or, in other words, one horse for 6 hectares and one head of cattle for 1.8 hectares.[2]

Of *horses*, the small-statured domestic breeds, such as the Bosnian, were the most widely distributed; however, the heavy Belgian work horses were also raised, especially in Vojvodina and Croatia. In addition, in Dalmatia, Montenegro, and Macedonia there were about 120,000 donkeys and some 20,000 mules.

Cows over 2 years of age comprised some 46–47 percent of the total *cattle* herd. About half of the cattle were of the domestic *Buša* breed, with an average live weight of 200–300 kilograms in the plains and of 150 kilograms in the mountain districts. The Buša cow yields from less than 1,000 to 2,000 liters of milk a year. About 4 percent of the cattle were of the *Podolian* and *Kolubara* domestic breeds, which weighed somewhat more (up to 600 kilograms) and gave more milk. The remaining cattle were improved dairy stock of various breeds. The most popular were the Simmenthal cattle, which weighed up to 650 kilograms and yielded 3,500–4,000 liters of milk per year. They made up one-fourth of the total herd. Less widely

[2] *Editor's note*: In comparing these figures with the livestock density figures given in the General Survey (p. 25) one should consider the difference in the animal unit: head of cattle or horses, regardless of age, as a natural unit here and head of "feed cows" (metabolic livestock unit) as an abstract unit there, the "feed cow" being used as a common denominator for animals of different kinds and different ages.

distributed were the Pinzgau cattle (10 percent), and the Brown Swiss, Montafon, and other breeds (about 10 percent). The Montafon cows yield as much as 6,000 liters of milk a year. The distribution of cattle in general and especially of the improved types is very uneven and varies in different parts of the country.

The Yugoslav *sheep* numbers were very large and during the period 1929–39 increased by over 30 percent. Sheep breeding played a very important role in the economic life of the rural population in certain parts of Bosnia, central and eastern Serbia, Macedonia, and other mountain districts. Sheep give the peasants milk, cheese (*kaškavalj*), meat, and wool for homespun cloth. The main body of sheep was of the domestic Balkan breed. Their milk productivity was very low because of the primitive, seminomadic conditions under which they were kept, while the production of wool—of very poor quality—amounted only to 1 kilogram or less per sheep. Vojvodina had considerable numbers of *Cigaja* sheep with a yearly yield of up to 2.5 kilograms of excellent wool. In certain parts of Croatia, Dalmatia, and Herzegovina the *Zakel* breed was raised. It gives up to 40 liters of milk during the lactation period and wool fleece 29 centimeters in length. In Slovenia the improved *Solčava* breed of sheep was raised.

About 2 million *goats*, the "poor man's cows," provided an important contribution to milk production in certain mountain districts. The prevailing breed was the Balkan, which yields 100 to 150 liters of milk during the lactation period.

Yugoslavia, and especially Serbia, has long been famous for its *pig* breeding. Formerly pigs were fattened upon acorns which they gathered in the forests. (It is interesting to note that the Serbian word for "acorn"—*žir*—means "fat" in Russian.) Pigs represented a very important source of both meat and fats for domestic consumption and export. About 56 percent of all pigs were the meat type and 44 percent of the fat type. The *Mangalica* fat type, which reaches 200–220 kilograms live weight, represented about 30 percent of the total stock. This, and another fat type, the *Šumadinka*, formed about two-thirds of the entire pig stock of the Vojvodina, the chief pig-raising and exporting district of Yugoslavia. The most common meat types are the domestic *Šiška* (23 percent of the total) and *Turopolje*, which gives excellent meat and large quantities of lard. Most numerous among the improved meat-type breeds were the crossed English pig (11 percent) and the German breed (8 percent), the latter especially in Slovenia.

Exports of live animals in the last years before the war were as follows (in thousand head; *1*, p. 238):

	Horses	Cattle	Pigs	Sheep and goats
1937.....	25.9	68.7	307.2	603.8
1938.....	22.6	33.1	260.0	245.8
1939.....	9.2	44.9	298.4	360.2

Poultry was an important source of meat in prewar Yugoslavia. The number of all kinds of birds increased by almost 30 percent from 1929 to 1939. Chickens comprised over 85 percent of the total stock, as shown by the following figures (in millions; *1*, p. 171):

	Chickens	Geese	Ducks	Turkeys	Total
1937.....	19.1	1.3	1.1	0.9	22.4
1938.....	19.4	1.3	1.1	0.9	22.7
1939.....	19.2	1.3	1.1	0.8	22.4

The prewar egg production is estimated at 800 million or 421,000 quintals. The most popular breed of chicken was the Styrian in Slovenia. They are good layers and their meat is tasty. Rhode Islands, Plymouth Rocks, and Leghorns were also fairly numerous.

Poultry and, particularly, eggs were important items in Yugoslavia's foreign trade. The following quantities were exported in 1937–39 (in thousand quintals; *1*, pp. 238–39):

	Live poultry	Eggs
1937.....	45.2	129.3
1938.....	40.1	155.7
1939.....	40.0	154.6

Apiculture.—The climate of Yugoslavia is favorable for bee raising, and the abundance of forests, especially of lindens and acacias, and a wealth of medicinal plants and uncultivated meadows provide sources of honey of high quality. The co-operatives encouraged the development of apiculture. However, the technical level of Yugoslav apiculture was low, and only during recent years has the number of modern hives with movable comb frames increased considerably. The production of honey amounted to about .3 kilogram per capita.

Fishing.—Yugoslavia has a long and broken coastline with many

islands, and also abounds in rivers and lakes. Sea fishing and fresh-water fishing were therefore both well-developed industries of long standing.

Fresh-water fishing was most important in the great rivers—the Danube, the Sava, the Tisa, the Drava, and their tributaries, as well as the Neretva. It was also developed in the lakes of Skadar and Ohrid (one-half of which belongs to Albania), Dojran and Prespa (one-half of which belongs to Greece). Finally, fishing was also conducted in numerous breeding ponds. The total annual yield of fresh-water fish was around 7 million kilograms, derived approximately as follows: river fish, 3 million kilograms; lake fish, 2 million kilograms; and pond fish, 2 million kilograms.

Sea fishing was equally important. The following table shows the number of fishermen, fishing boats, and yield of fish and shellfish for 1937–39 (*1*, pp. 177–78):

Year	Fishermen (*1,000*)	Fishing boats (*1,000 tons*)	Production (*million kg.*)	Production (*million dinars*)	Distribution (*million kg.*) Fresh	Preserved	Exported
1937.....	20.5	12.1	7.2	34.9	4.6	2.2	.5
1938.....	21.1	13.5	8.1	39.1	5.2	1.8	1.0
1939.....	21.5	12.6	6.3	30.8	4.3	1.5	.5

The relatively small yield of sea fish must be attributed to the primitive fishing methods in Yugoslavia. The figures for exports of sea fish given above apparently apply to fresh fish only, since, according to the statistics of foreign trade (*11*, pp. 29–30), the export of salted sardines in 1939 amounted to 1.23 million kilograms, and the total export of fresh- and sea-water fish amounted to 2.5 million kilograms in 1938 and to 3.0 million kilograms in 1939. As the total quantity of fish caught in the last prewar years amounted to 14–15 million kilograms, the domestic consumption of fish was approximately 11.5–12.5 million kilograms or less than 1 kilogram per capita a year.

Animal foodstuffs.—No official Yugoslav data on production or supplies of foods of animal origin are available, and unofficial estimates display a rather wide range of disagreement. Appendix Table I (p. 363) compares 1934–38 averages published by the Food and Agriculture Organization of the United Nations in 1949 with a more recent, private set of estimates for the same period.

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CHAPTER 2

FOOD BEFORE THE WAR

FOOD INDUSTRY

The best cook cannot serve more peas than he receives from the gardener, the physiocrats were wont to say. However, many agricultural products can be consumed only in a processed form. Therefore the food supply of the population depends in a great measure on the development of the food industry.

With the exception of some branches of mining, industry was poorly developed in prewar Yugoslavia, although considerable achievements had been made in this respect in the last years. Of the various industrial branches the agricultural and food industries were the most developed. This may be seen in the following data on the number of industrial enterprises in 1935–39:

Industry	1935	1939	Increase or decrease
Food and related agricultural products	693	906	+213
Building materials	386	422	+ 36
Textile	341	417	+ 76
Timber	449	405	— 44
Metal	232	271	+ 39
Electrotechnical	186	206	+ 20
Chemical	166	188	+ 22
Paper and graphic	58	84	+ 26
Various	138	139	+ 1
Total	2,733	3,129	+396

During the four years the total number of enterprises increased by about 14.5 percent, as compared with a 32-percent increase in enterprises in the food and related agricultural-products industry. Yugoslavia being an essentially agrarian country, it is reasonable that the food industry was the most developed. Many enterprises, however, were working for export rather than for domestic consumption.

The principal branches of food industry were as follows:

Flour mills and related establishments.—There were in Yugo-

slavia over 10,000 large and small mills with a total annual capacity of 3.3 million tons of flour. Of the larger mills about 500 had a yearly capacity of over 1.25 million tons. Of this number about 150 could be classed as large industrial enterprises, but they worked only up to one-half of their capacity since the export of flour was insignificant. Related by-products included paste, vermicelli, noodles (about 25 factories, of which 10 were of an industrial character), starch from corn, wheat, and potatoes (17 factories). In this group may also be classed rice mills (8 local mills, for the hulling and cleaning of the domestic and imported rice for domestic consumption, with a capacity of 25,000 tons a year); paprika mills (8 mills with a capacity of 5 tons daily and under a special state control for the checking of the quality of the product for export before leaving the factory); chicory industry (3 factories); mustard industry, etc.

Sugar factories and fruit processing.—The capacity of the 9 prewar sugar factories amounted to 140,000 tons. Since the domestic consumption of sugar was only about 100,000 tons, there was a surplus for export. The principal products of sugar were such sweets as *halvah*, *rahat-loukhum*, and chocolate. The processing of fruit and vegetables was little developed, but about 6,000 community and home-operated dehydrators were used in the drying of prunes.

Breweries and distilleries.—The production and consumption of beer was relatively low in Yugoslavia since the people preferred wine and the national brandy (*rakija*). There were 36 breweries with a capacity of 1.5 million hectoliters, but only two-thirds of them operated steadily and at only about 15 percent of their capacity. There were over 50 distilleries with a total capacity of 10,000 tons annually, but only 8 were of the industrial class, the others being small agricultural distilleries. Closely allied to the production of spirits was the yeast industry (15 factories with a daily capacity of 15 tons, which exceeded the domestic demand). The manufacture of various liqueurs was well developed, as was the production of vinegar. Among the peasants the home distilling of fruit brandy (especially of prune brandy, *slivovica*) was common.

Vegetable-oil refineries.—Yugoslavia produced oil from various oilseeds such as beet, pumpkin, poppy, etc., but the most important edible oil was olive oil. Production of the latter was confined to the Adriatic coastlands where about 30 factories—of which 5 were of large capacity, the others being mostly of local character—produced 6–7 thousand tons annually.

Meat.—The meat industry was not so well developed as might

have been expected considering the extent of livestock breeding. The reason for this was that nearly all countries importing meat from Yugoslavia preferred to buy either live or freshly slaughtered animals, as in this way they were able to realize greater profits for themselves. Of about 20 newly founded enterprises for the processing and exporting of meat, only 6–10 remained, working at a reduced capacity and mainly for the domestic market. To this branch of industry belonged also the fish canneries. The most numerous and important were the sardine canneries of which there were 20. However, domestic consumption was low because canned fish was too expensive for the poor population, and there was a very strong competition in the export market from other countries (Spain, France, Holland) where this industry is better established and better organized commercially.

FOREIGN TRADE AND PRICES OF FOODSTUFFS

The number of commercial enterprises in Yugoslavia in the period from 1936 to 1939 increased from 136,000 to 162,000, but Yugoslav statistics give no data on the turnover of the domestic commerce. We know only that the turnover of six Yugoslav exchanges amounted to 7.5 billion dinars in 1930, decreased in the years of the crisis to 1.4 billion dinars in 1933 and increased again to 5.2 billion dinars in 1939. In 1939 the turnover of the exchanges consisted of 1.1 billion dinars of transactions involving goods (mainly cereals and lumber), of .4 billion dinars of fund transactions (mainly state bonds), and of 3.7 billion dinars of foreign exchange transactions.

Foreign trade.—Regarding foreign trade the Yugoslav data are more definite. The Yugoslav exports and imports fluctuated from 1925 to 1939 as follows (*1*, pp. 234–63; *2*):

	Quantity (*million tons*)		Value (*million dinars*)		
	Exports	Imports	Exports	Imports	Export balance
1925.....	4.4	1.5	8,905	8,753	+ 152
1926.....	4.9	1.2	7,818	7,632	+ 186
1927.....	4.8	1.3	6,400	7,286	− 886
1928.....	4.5	1.6	6,445	7,835	−1,391
1929.....	5.3	1.7	7,922	7,595	+ 327
1930.....	4.7	1.5	6,780	6,960	− 180
1931.....	3.3	1.1	4,801	4,800	+ 1
1932.....	2.4	.9	3,056	2,860	+ 196
1933.....	2.9	.8	3,378	2,883	+ 495

1934.....	3.6	.9	3,878	3,573	+ 305
1935.....	3.3	1.0	4,030	3,700	+ 331
1936.....	2.9	1.0	4,376	4,077	+ 299
1937.....	4.6	1.1	6,272	5,234	+1,038
1938.....	3.7	1.3	5,047	4,975	+ 72
1939.....	3.5	1.1	5,521	4,757	+ 764

The years 1925–30 were the period of maximal tonnage of both exports and imports. Trade fell off sharply during the world crisis, but staged a moderate recovery before the onset of World War II. Since Yugoslavia exported mainly agricultural, mining, and lumber raw materials, and imported industrial products, the tonnage of exports considerably surpassed that of imports. In monetary value, with the exception of 1927/28 and 1930, the exports consistently exceeded the imports; the difference was especially marked in 1937 and 1939.

The Yugoslav foreign trade was distributed by countries as follows (in percentages of the total exports and imports):

	Exports				Imports			
	1933	1936	1938	1939	1933	1936	1938	1939
Germany	13.9	23.7	35.9	31.9	13.2	26.7	32.5	47.7
Austria	21.7	14.6	6.1		16.1	10.3	6.9	
Czechoslovakia ...	10.8	12.3	7.9	14.5[a]	12.1	15.3	10.6	6.6[a]
Italy	21.5	3.1	6.4	10.6	15.9	2.5	8.9	11.7
England	2.7	9.9	9.6	6.6	9.7	8.5	8.7	5.1
Belgium	3.4	5.2	6.7	6.3	0.9	2.5	1.0	1.1
Hungary	3.5	3.8	4.3	5.2	3.9	3.6	3.8	3.6
United States	1.9	4.9	5.1	5.1	5.1	6.4	6.0	5.2
Switzerland	3.3	2.2	1.7	3.0	2.4	2.5	1.9	1.2
France	2.2	2.0	1.5	2.5	4.2	2.5	2.8	2.0
Other countries ..	15.1	18.6	14.8	14.3	16.5	19.2	16.9	15.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a] The Czecho-Moravian Protectorate and Slovakia.

In 1933 the first place in exports and imports was held by Austria, the second by Italy, the third by Germany, and the fourth by Czechoslovakia; these countries accounted for 67.9 percent of Yugoslavia's total exports and 57.3 percent of her imports. During the last few years before the war the participation of Austria and Italy fell off and Germany's share in both imports and exports increased sharply. The percentage of trade with "other countries" was also fairly high, showing that exports and especially imports were distributed in small portions among a large number of countries.

The most important kinds of exported goods were food, timber, and metals; textiles, machines, and metal products led in imports.

The most important individual exported foodstuffs were wheat, corn, fresh fruit, dry prunes, pigs, cattle, fresh meat, eggs, and lard. The exports of these foodstuffs in 1932, 1937, and 1939 were as follows:

	Quantity (*thousand tons*)			Value (*million dinars*)		
	1932	1937	1939	1932	1937	1939
Wheat	133.1	318.0	214.7	163.3	561.4	375.1
Corn	185.3	725.2	92.9	136.0	698.9	99.1
Fresh fruit	87.0	25.6	67.8	149.1	64.5	175.0
Dry prunes	22.3	9.0	37.8	65.6	34.5	124.9
Pigs, live	24.6	36.9	32.8	263.6	424.6	484.2
Cattle, live	11.0	24.1	12.3	58.0	161.3	107.7
Fresh meat	16.0	19.3	20.1	153.5	234.8	282.5
Eggs	16.5	12.9	15.4	182.2	125.2	160.3
Lard	1.0	8.3	8.3	10.4	122.5	140.2

Among other foodstuffs were various kinds of cheese (especially *kaškavalj*) of which 1.7 million kilograms were exported in 1939, with a value of 29.6 million dinars, and canned food, with exports of .3 million kilograms valued at 9.2 million dinars. The most prominent imported foodstuffs were rice, southern fruits, colonial goods, vegetable and animal fats (margarine, etc.), and the products of the milling industry. In the four groups of products of agriculture and food industry the total value of exports exceeded that of the imports by 2.0 billion dinars in 1938 and by 2.3 billion dinars in 1939 (see Appendix Table II, p. 364). This was an active item of Yugoslav *trade* balance, but a passive item of its *food* balance.

For the development and rationalizing of Yugoslav exports an "Office of Foreign Trade" was founded by the decree of November 29, 1929. The office was attached to the Ministry of Commerce and Industry and comprised information and propaganda and publicity services. In May 1930 a Privileged Export Company (Privilegovano Izvozno Aktionarsko Drustvo, known as Prizad) was established with a state credit of 50 million dinars and a foundation capital of 15 million dinars divided into 15,000 shares of 1,000 dinars. Prizad was engaged exclusively in the export of agricultural products (wheat, corn, fruit, and opium). By the act of December 14, 1931 an Office for the Control of the Exports of Stock, Dairy Products, and Preserved Meat was founded.

Prices of foodstuffs.—Since Yugoslavia was, through the medium of its exports of large quantities of foodstuffs, closely connected with foreign markets, the prices of foodstuffs reflected all the fluctuations of prices in the world markets. At the same time they depended also upon domestic conditions such as the harvest and the state of currency circulation. The last named influenced not only the prices, according to the "currency principle," but was itself, according to the "banking principle," influenced by all changes of prices. The quantity of banknotes issued for circulation by the National Bank of Yugoslavia and representing legal tender fluctuated as follows (in billion dinars):

1926 .... 5.8	1933 .... 4.3	1939 .... 9.7
1928 .... 5.8	1934 .... 4.4	1940 .... 13.8
1930 .... 5.4	1936 .... 5.4	March 1941 .... 14.3
1932 .... 4.8	1938 .... 6.9	

The quantity of banknotes in circulation decreased in the period of depression and the deflationary policy, reaching its lowest point in 1933. From 1934 on it steadily increased and in 1939–41 became inflationary. This was one of the basic reasons for the swift increase in prices, including prices of foodstuffs, in 1939–40.

The course of wholesale prices before World War II is shown in Table 2. Prices of crop and animal products reached their lowest

TABLE 2.—INDEXES OF WHOLESALE PRICES, 1926–40*
(*1926 = 100*)

Yearly and monthly average	Total index, 55 items	Vegetable farm products	Products of stock breeding	Minerals	Industrial products	Export goods, 20 items	Import goods, 20 items
1926	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1928	106.2	130.1	108.6	86.4	98.0	114.6	96.0
1930	86.6	89.3	96.3	88.2	80.3	93.5	79.8
1932	65.2	67.5	56.6	76.3	66.2	60.9	68.3
1933	64.4	57.2	57.1	75.5	70.8	58.4	74.3
1934	63.2	57.4	55.4	80.8	67.4	59.1	70.1
1936	68.4	69.7	60.0	81.0	69.7	64.8	71.1
1938	78.3	85.8	65.8	89.9	78.2	76.2	71.2
1939	79.3	82.5	68.7	94.9	79.8	77.2	79.7
Dec. 1939	90.0	90.7	82.8	106.5	91.6	90.8	96.1
1940	114.1	137.4	—	—	110.5	—	—

* Data from Yugoslavia, Statistique générale d'état, *Annuaire statistique, 1940* (1941), p. 297; Jozo Tomasevich, "Postwar Foreign Economic Relations," in *Yugoslavia*, R. J. Kerner, ed. (United Nations Series, Berkeley, Calif., 1949), p. 204.

points in 1933 and 1934, falling noticeably below those of industrial products; as a corollary the prices of exported goods fell more than those of imported goods. Thus, the price "scissors" between agricultural and industrial products opened to the disadvantage of the rural population. After 1934, prices began to rise, with a sharp upward sweep occurring at the end of 1939 as a consequence of the beginning of the war. Prices of items for which there arose a wartime demand climbed especially steeply. The price of minerals rose greatly, to the advantage of the mining industry of Yugoslavia. Agricultural products also went up in price, improving the economic situation of those groups of the Yugoslav peasantry with surpluses for sale. This, however, caused food supply difficulties for the poorest groups of peasants and for the urban population who were obliged to purchase agricultural products.

GENERAL CHARACTER OF PREWAR NUTRITION

Up to the war the upper and rather large middle classes of the Yugoslav population were relatively well supplied with food. The abundance of bread, vegetables, fruit, meat, and fats on the market, and the comparatively low prices of these foodstuffs, permitted the population to acquire them with ease. A certain monotony in the food supply was caused not by shortages but by the habits of the population, which inclined toward the consumption, for example, of large amounts of bread and beans instead of vegetables, of lard instead of butter, of *rakija* and wine instead of fresh fruit, etc.

However, the nutrition of a considerable portion of the peasants, particularly in mountainous regions, was inadequate owing to overpopulation relative to the productivity of the land. Rural overpopulation, in turn, exerted a pressure on the nonagricultural labor market, depressing wages and salaries to such a degree that many urban workers and employees could not afford an adequate diet.

Because of the prevalence among the peasants of small and even dwarf holdings—assuming that the household had no outside additional income—not only the variety of food but also the quantity was deficient. According to estimates, about one-half of all peasant households had not enough bread and other food to supply their needs from one harvest to another. In some food-deficit or, according to the Yugoslav terminology, "passive" provinces this percentage was even higher. With the decreasing size of farms, agriculture concentrated on the production of cereals, especially corn, particularly in provinces showing the greatest rural overpopulation. Often peas-

ants were obliged to sell their wheat and other foodstuffs to buy corn and other necessities as well as to pay state and communal taxes. Bread and cornmeal mush were the staple food of the poor rural population and of low-income urban groups. Since the preserving of food was not developed, the food supply was subject to great seasonal changes, and the period between March and June was the leanest. According to some statistical investigations of consumption, the average per capita consumption of food contained a high enough caloric value, namely 3,200 calories daily, but over three-fourths of this was derived from cereals, largely from corn and cornmeal. Less monotonous was the food of urban artisans, but its caloric value was (in Zagreb) only 2,500 calories daily, of which, however, only 42 percent was derived from cereals, 4 percent from potatoes, and 8 percent from pulses; a considerable percentage came from fats, milk, meat, eggs, green leafy vegetables, and fruit. As regards the type of bread, that made entirely of wheat was predominantly (over 50 percent) consumed in Vojvodina, parts of Serbia and Croatia, in Slovenia, along the Adriatic coast, and in cities. In many regions mixed corn-and-wheat bread predominated. The remainder of the people consumed corn bread and cornmeal mush, and, in some mountainous areas, barley and rye bread.

Consumption of animal foodstuffs, such as milk, meat, lard, and eggs, by low-income groups and most peasants was very low. Only in some rural areas where animal husbandry was the basis of livelihood was peasant nutrition characterized by a relatively high consumption of milk, cheese, and meat. But the consumption of green vegetables and fruit was very insufficient in these areas.

The prosperous urban households consumed too much fat, especially lard and rich pork, which, according to medical opinion, was the cause of relatively widespread liver complaints; at the same time, the greatest relative deficiency in the nutrition of low-income rural population was precisely in fats and oils, especially in the so-called "passive" provinces. The only exception was Dalmatia which produced its own olive oil.

Owing to the agricultural character of Yugoslavia, the agricultural world crisis of the early 1930's had considerably undermined the nutrition of the rural population. However, except for unemployed workers, the food situation in towns improved during the crisis owing to lowered food prices. During the last prewar years, as we have noted above, these prices rose again and caused a recession in the food situation of both rural and urban population. For

the study of the general trend of consumption the fluctuation of sugar consumption is typical. Before the crisis it amounted to 7.5 kilograms per capita yearly and dropped to 5 kilograms in the crisis period. But in the last prewar years the consumption had again increased in connection with a general improvement of the economic situation of the country.

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CHAPTER 3

WARTIME FOOD SUPPLY

WARTIME DESTRUCTION OF YUGOSLAV ECONOMY

Yugoslavia was invaded by Germany and Italy on April 6, 1941. By April 19 of the same year it was occupied, dismembered, and partially annexed by German, Italian, Hungarian, and Bulgarian forces. Only a handful of Serbian armed forces under the command of Draža Mihajlović and, later, the more numerous Communist partisans under the leadership of Josip Broz-Tito continued the struggle against the occupants.

The initial military operations, the disorganization of administration, mass deportations, arrests, and executions following partition of the country, the seizure of property and requisition of supplies and equipment by the occupying powers, the destruction and sabotage arising from guerrilla resistance, the scorched-earth acts of the enemy in retreat—all contributed to the disruption of Yugoslavia's economy.

To begin with, Yugoslavia lost a large part of its population. These biological losses were estimated at 1.7 million persons (*1*, p. 1) and, according to the census of March 15, 1948, may even be estimated at some 2.0–2.5 million, or about 12 percent of the 1940 population. The above loss is the more painfully apparent because it consisted mainly of Yugoslav male population of productive age.

As for the material destruction and damage, according to the Yugoslav Memorandum presented to the Conference of Deputy Ministers of Foreign Affairs in London, the total loss of Yugoslav national wealth was estimated at 9,145 million dollars.

The building losses are estimated as follows: 310,000 buildings in rural areas and 98,000 in towns were destroyed, and 90,000 buildings in rural areas and 31,000 in towns were heavily damaged. About one-sixth of all housing was destroyed or heavily damaged. Especially heavy was the damage to Belgrade (one German and one Allied air raid) and to regions which had been the scene of partisan warfare (northern Bosnia).

Livestock suffered extremely heavy losses. According to the

data of the War Reparations Commission of the Federal People's Republic of Yugoslavia (FPRY) in its Memorandum on *Human and Material Sacrifices of Yugoslavia* the losses of various kinds of animals were as follows (in 1,000 head and in percentages of livestock numbers in 1939; *2*):

Horses	798	63
Cattle	2,397	56
Sheep and goats	6,324	53
Pigs	2,123	61
Poultry	12,604	56
Beehives	329	42

The reduction by 50–60 percent of the number of cattle, sheep, goats, pigs, and poultry had a sharply adverse effect on the food supply. The reduction (over 60 percent) of the numbers of horses had a catastrophic effect upon the draft power in agriculture, which was in turn bound to have unfavorable effects on the entire agricultural picture of the country. The devastation of villages had been carried so far that even the number of beehives was reduced by 42 percent of the 1939 numbers. The losses in livestock were especially painful for the poorer farmers who were able to produce only a part of the food requirements for their households, and the livestock in their possession produced the only marketable commodities which provided the meager cash income needed to purchase food.

The destroyed or damaged agricultural equipment was estimated as follows, in thousands (*1*, p. 7):

Tractors	1.5
Steam locomobiles	2.5
Motors	5.3
Selectors and tryers	5.9
Windmills	46.9
Threshing machines	12.8
Tractor plows	1.5
Other plows	495.9
Driers	45.3
Harrows	500.0
Peasant carts	485.0

With the paucity of agricultural equipment in Yugoslavia these losses were bound to be felt very acutely by agriculture and reflected in the food supply.

The number of fruit trees destroyed was estimated at 18 million or 26 percent of the total number in 1939. The area of destroyed

vineyards amounted to 84,500 hectares or 38 percent of the total.

Besides this destruction of agricultural production, the stocks of grain, wool, and other agricultural products on hand at the beginning of the war or accumulated in richer provinces during the years of good harvests were repeatedly seized by occupants. The impact of the war was felt mostly by the poorest parts of the country. The Vojvodina, though it had to export its surplus to Germany, was comparatively undisturbed up to the autumn of 1944. But with the advance of the Red Army into the Vojvodina, which coincided with the fall sowing of wheat and the sugar-beet harvest of 1944, this region became a battlefield and suffered serious damage. Since this region supplied the passive provinces with food, and since the available surplus was now much smaller, the rest of the country suffered.

The total quantity of agricultural products and products of stock breeding confiscated by the occupants and exported to Germany, consumed, or destroyed, is estimated at 1,083 thousand carloads, i.e., 10.8 million tons. What this meant to the food supply of the Yugaslav population may be gathered from the fact that the whole crop of the five principal cereals (wheat, corn, barley, rye, and oats) and of potatoes in 1939 amounted to less than 10 million tons. The comparison creates some doubt as to the exactness of these figures of losses quoted by Yugoslav official organs, but the losses touched the four harvests of 1941–44 (predominantly the harvest of 1944).

The forests suffered severely for the following reasons: (*a*) direct exploitation by the occupying powers; (*b*) overcutting to meet the increased demand for fuel and shelter in devastated regions; (*c*) lack of proper maintenance as a result of hostilities, occupation, and civil war; and (*d*) felling of large bodies of forests near highways and railways as a countermeasure against partisan activities. It was estimated that in Croatia alone about 40 percent, and throughout the country as a whole about 10 percent, of the forest area has been lost for the above reasons. Irreparable losses were caused by indiscriminate felling without reforestation of some 175,000 hectares of forest land which, owing to soil erosion, has now become completely barren. The devastation of forests includes the destruction of 84 percent of forest railways, 55 percent of forest roads, and 52 percent of logging passes.

The losses sustained by transport were especially heavy. Of the total length of railroads of 10.7 thousand kilometers, about 6.1 thousand were destroyed or damaged, along with the majority of bridges. Losses of rolling stock on the normal-gauge lines were as

follows: locomotives, 1,190 out of 2,200; passenger cars, 2,920 out of 5,400; freight cars, 30,300 out of 56,200. The capacity of repair shops was reduced for locomotives by about 40 percent and for freight cars by 60 percent. Of the small number of automobiles and trucks a great part was destroyed or exported. More than one-half of the ocean-going craft and over two-thirds of the coastal shipping, as well as the bulk of river craft, were lost.

This reduction of the transport had a very adverse effect upon the food supply immediately after the termination of the war, as it made any distribution of food supplies almost impossible and even prevented the deliveries of foodstuffs by the United Nations Relief and Rehabilitation Administration (UNRRA).

All the above-enumerated wartime devastations of the Yugoslav national economy were painfully reflected in the food supply. The food situation, unsatisfactory for the broad masses of the population in the regions of passive food balance and for the poorest strata of the population of other regions even before the war, became during the second triennium of the war extremely precarious for almost the entire population. In 1945 the country was literally reduced to starvation.

FOOD SUPPLY DURING THE PREINVASION PERIOD

With the beginning of the war the food supplies as well as the food consumption of Yugoslavia deteriorated rapidly. They dropped to an extremely low level in the dismembered Yugoslav state during the occupation and partisan struggles. In some regions, however, the lowest point was reached during 1946, the first year after the war.

As far back as the beginning of World War II and before the German-Italian invasion the Yugoslav government decreed some emergency economic measures. In addition to restrictions on withdrawals of bank deposits and the control of production and distribution of coal, and other mining and metallurgic products, the government created on September 7, 1939 a special Office for the Study of Foodstuffs under the supervision of the Ministry of Agriculture. The purpose of this office was to prepare a plan for the supply and distribution of food as well as to compile pertinent data on agricultural production. The office was divided into three sections: statistical section, section of foodstuffs and animal fodder, section of farm labor and for agricultural research. The section of foodstuffs and fodder was charged with the following functions: compilation of data on the consumption of foodstuffs and fodder in various regions

of the country; determination of the actual requirements of these regions, of their regional shortages and surpluses, the rationing of food and, if necessary, collection and transportation of surpluses; and, finally, the building up of food reserves. The other sections were charged with various functions of planning and organizing agricultural production and adequate distribution of foodstuffs.

The following additional measures of economic mobilization were carried out during the preinvasion period:

Control of foreign trade.—By the decree of August 24, 1939 the National Bank of Yugoslavia was empowered to control the imports and exports of a large number of commodities. The decree of March 28, 1940 centralized the control of foreign trade and established a new Office of Foreign Trade, which absorbed the Prizad (p. 321; see also *3*). The task of the new office was to regulate the exports and imports and to co-operate with all ministries dealing with the question of foreign trade. The office exercised its authority through the issuance of import and export licenses.

Monopolization of trade in some essential products.—By a series of decrees issued in 1940 and the beginning of 1941 the trade and distribution of domestic wool, oilseeds, and oils and fats were monopolized in the hands of the Prizad (*3*). Other organizations were entrusted with the task of distributing fertilizers, tires and inner tubes for motor vehicles, and, in Croatia, also hides and skins.

On August 17, 1940 a similar supply organization, the Privileged Trading Company (Povlašćeno Gospodarsko d.d. Banovine Hrvatske, known by the abbreviation Pogod; *3*) was established also in autonomous Croatia, with a capital of 20 million dinars of which two-thirds was paid by the government. On the basis of the decree of October 31, 1940 this organization received from the Privileged Agrarian Bank in Belgrade a loan in the amount of 250 million dinars for financing the supply and distribution of foodstuffs for the population of Croatia. The results of these regulations are not known, nor is the efficacy of the short-lived Ministry of Supply.

Price control.—In February 1940 a board for the regulation of prices was established. The board controlled the supply and consumption of commodities and fixed the maximum prices of bread, flour, wheat, corn, rice, coffee, tea, edible fats, meat, soap, candles, firewood, coal, textiles, leather, iron, and agricultural implements. By the decree of June 15, 1940 special price controllers were appointed for each regional office of this board. The decree of December 31, 1940 later fixed prices for corn (250 dinars per ton) and

various other commodities. By the decree of January 1, 1941 the Ministry of Supply was established for the control of the prices of all foodstuffs, clothing, leather, building materials, and other goods with the exception of luxury items. This Ministry took over the functions of other control offices. On February 24, 1941 a penal decree was published.

Control of consumption.—Rationing of consumer goods was introduced early in 1940. From March 1, 1940 ration cards were issued for gasoline. Meatless days—initially two a week, later three, then two again—were instituted by the decree of May 16, 1940. In February 1941 ration cards for petroleum were issued in Croatia (Zagreb).

FOOD SUPPLY DURING THE OCCUPATION PERIOD

After the invasion Yugoslavia ceased to exist as one state. Serbia, including Old Serbia and the Banat, with the government of Milan Nedić, fell under the military administration of Germany; the Yugoslav part of the Banat, economically speaking, was separated from Serbia and served the needs of Germany. Croatia was recognized by Germany and Italy (April 15, 1941) as an "independent" state governed by the Ustaši under Ante Pavelić, the Croatian terrorist leader who had engineered the murder of the Yugoslav King Alexander on October 9, 1934. This new Croatia received from the occupying powers not only the old Croatian territory but also a part of the Vojvodina, the whole of Bosnia and Herzegovina and Dalmatia (approximately 115,000 square kilometers with a population of some 5 to 7 million). However, of this area two parts of Dalmatia and a part of Croatia were annexed by Italy; the rest of Dalmatia and parts of Bosnia and Herzegovina were occupied by Italy. The northern part of Slovenia was annexed by Germany, the southern part by Italy, and the northeastern part by Hungary. Also a part of the Vojvodina (Bachka and Baranya) was annexed by Hungary. Montenegro became an Italian "protectorate." Parts of south Serbia and of Macedonia were occupied by Italy and Albania, while the greater part of Macedonia was occupied by Bulgaria (see map).

The Yugoslav national economy was dismembered and each separate part began now to live or, rather, to suffer in its own peculiar manner. The food regimes in these parts differed, but had the common trait that everywhere the food situation deteriorated; toward the end of the war in some provinces, like Bosnia, Herzegovina, Lika, and parts of Serbia, the level of starvation was approached.

YUGOSLAVIA IN 1942*

* Adapted from a map in the *New York Times*, Nov. 19, 1942. *Identification of numbers:* 1. Part of Croatia annexed by Italy. 2. Part of Slovenia annexed by Italy. 3. Part of Slovenia annexed by Germany. 4. Part of Slovenia annexed by Hungary. 5. Part of Vojvodina annexed by Hungary. 6. Part of Serbia proper occupied by Bulgaria. 7. Part of Macedonia annexed by Bulgaria. 8. Part of South Serbia annexed by Albania. 9. Montenegro occupied by Italy. 10, 11. Parts of Dalmatia annexed by Italy. 12. Parts of Dalmatia, Bosnia, and Herzegovina occupied by Italy.

Following is a discussion of the measures taken to cope with the food supply problem in various parts of Yugoslavia (*4*).

SERBIA

The Serbian government acted in economic matters under the supervision of Franz Neuhausen, former German Consul-General in Belgrade, who was appointed as provisional economic agent plenipotentiary of occupied Serbia with an official of the Reichsbank as his assistant.

Agricultural production and farm control.—At the instruction

of the German command the government undertook a series of measures for the conservation of agricultural production, and a program for its promotion was worked out. In 1942 all main crops were to be delivered at fixed prices to monopoly organizations and the peasants were organized into compulsory co-operatives. All shipments of cereals, meat, fats, and livestock were controlled by means of transport licenses. The civilian supply office established quotas to be filled by various districts. Heads of town councils were held responsible for local control. The district administration supervised delivery of grain after threshing.

The production program for 1942/43 provided for 825,000 hectares to be sowed to corn, 500,000 hectares to wheat, and 400,000 to barley, and certain areas were allotted for rye, potatoes, sunflower, tobacco, etc. In the cases of failure to fulfill the sowing quota a farmer faced the possible penalty of having his farm requisitioned without compensation and given to another farmer.

Price control.—In order to reduce the demands of the population and to prevent rises in prices, as well as to hinder the supplying of the guerrillas with money, the withdrawal of bank deposits was placed under control. Direct price control consisted of measures formulated after the model of the German "price-freezing" decree. The initial decree of April 1941, and a series of other decrees, prohibited the increase of prices for any agricultural and industrial products above their actual pre-occupation level. All decrees contained severe penalty clauses. However, the decree of June 18, 1941 authorized the Minister of Economy to establish a new scale of prices and to regulate wages in order to stabilize the price level.

Because of insufficient rationing the population, especially in towns, had to depend upon the black market for its provisioning. According to newspaper dispatches from Belgrade, "prices of food and goods in Serbia . . . soared despite these various controls" (*4*, p. 14). This was the result of many factors. The occupants paid for goods with occupation currency and requisition receipts, both of doubtful value. The farmers refused to sell their products for worthless money, and thus brought about an acute food shortage. This condition was aggravated by the influx of thousands of refugees from Croatia, where Pavelić's Ustaši were persecuting the Serbian population, and from parts of Yugoslavia annexed by Hungary or occupied by Bulgaria where there also reigned a regime hostile to the Serbs. Not a few Slovenians were deported to Serbia from northern Slovenia. The damage inflicted by the invaders,

some destruction caused by the partisans, as well as shortages of labor and transport—all caused an acute shortage of commodities. The guerrilla warfare hindered reconstruction. For example, fuel supplies became scarce since wood could not be collected with safety. It was reported that "sugar refineries had to be supplied with fuel by the German Army and imports of coal from Bulgaria became necessary. Further, rebel bands have succeeded in wrecking whole industries, as, for example, the Kutchaje Hills Mining district" (*4*, p. 15). According to the same source, in May 1942 the prices on the black market increased in the following manner (in dinars per kilogram): lard, from 35–44 to 150; pork, from 25 to 60.

Coffee and tea prices were prohibitively high, one kilogram of coffee costing about 1,000 dinars; after May prices rose even higher. In October 1942 one quart of milk cost 50 dinars, fat 280–300 dinars, and meat 220–280 dinars per kilogram. In January 1943 one cubic meter of wood cost 3,000 dinars, and a man's suit about 20,000. At this time the average monthly salary of government employees amounted to 3,000–5,000 dinars.

The German authorities established corporal punishment for dealers on the black market. The penalty was 25 strokes publicly applied, but this did not act as an effective deterrent, and people continued to buy needed commodities in the black market at several times the official price (*4*, pp. 15–16).

Rationing.—On June 18, 1941 the Military Command in Serbia issued a decree ordering the rationing of certain goods. However, no general food rationing could be introduced in Serbia since over 80 percent of the population lived on their own land and were engaged in farming. The food in towns was rationed but at no time were all of the rationed goods available at official prices.

The *Monthly Bulletin of Statistics* of the League of Nations (*5*) stated that in Belgrade the normal consumer was allotted 2,000 grams of bread per week, 150 grams of sugar, and 125 grams of meat. In April 1943 the weekly food ration for Belgrade was: bread, 2,240 grams, or flour, 1,470 grams; meat, 125 grams; sugar, 150 grams; fats, 80 grams; oil, ⅛ liter monthly. According to the Inter-Allied Information Committee (London), in May 1942 the weekly meat ration was one-half pound, and milk and other staples were completely unobtainable or were sold at prohibitive prices. Bread consisted of a mixture of ⅓ wheat and ⅔ corn. The populace began to form queues for bread at dawn. Churches organized groups for the collection of bread for deficient districts, the distribution of

which was supervised by the charity organization *Karitas* (*4*, p. 18).

Also rationed were clothing and textiles, paper, motor fuel, and illuminating oil.

Of great importance were the quantities of crops which each agricultural producer might keep for food for his family and workers, as well as for seed, and for covering threshing expenses and loss of weight, since all surpluses over these quantities had to be sold at fixed prices to the monopoly trading organization Prizad (see p. 321), a regulation that created much dissatisfaction among the Serbian peasants. These quantities were established by the decrees of June 12, June 18, and especially June 20, 1941. Article V of the last-named decree established the following amounts of wheat permitted the producer for his own consumption (in kilograms or in percent of the estimated crop):

Use	Serbia	Banat
For producer's household:		
Kilogram per person	250	350
For seasonal workers:		
Kilogram per hectare	150	—
Kilogram per joch[a]	—	110
For seed (including 30 percent cleaning waste):		
Kilogram per hectare under wheat	220	—
Kilogram per joch under wheat	—	220
For threshing expenses:		
Percent of crop	8	9
For loss of weight:		
Percent of crop	3	3

[a] A joch is .575 hectare.

The fertile Banat was made into an economically independent unit in order to prevent the exportation of its crop surplus into Serbia. According to the decree of November 3, 1941, grain, flour, bread, fodder, oil seeds, edible oils, legumes, livestock, meat, bacon, lard, eggs, poultry, honey, game, sugar, milk, butter, cheese, and potatoes might be shipped from Banat to Serbia only by special permission of the proper trading monopolies or by permit of the deputy administrator for the Serbian economy. Even special travel permits were required for those who wished to leave the Banat. The purpose behind all these measures was the conservation of the rich crop surpluses of Banat for export to Germany.

The severe discriminatory measures of the Axis powers con-

tributed to the deterioration of the food supply; expulsions added to the burden of the Yugoslav food crisis. In the Styrian area of Slovenia, annexed by Germany in September 1941, the number of persons deported to Croatia and Serbia was estimated at 28,000; that of refugees from over the border to Ljubljana where the Italian regime was comparatively more conciliatory, 8,000. The non-Bulgarian population of Serbian Macedonia underwent systematic expulsion by the Bulgarians. The number of Serbs, Bosnians, Jews, and other people evicted from the Bachka and Baranya by the Hungarian occupants has been estimated at 80,000 (*4*, p. 25).

Foreign trade.—Foreign trade was regulated by the decree of June 18, 1941, which provided that imports and exports could be made only pursuant to a license issued by the Ministry of Commerce. The decree of June 26, 1941 established a committee for foreign commerce set up in the Foreign Commerce Division of the Ministry of Economy. The duty of this committee was to decide all import-export matters. The main purpose of the regulation of foreign trade was to facilitate the exports of foodstuffs and other goods to Germany.

CROATIA

On April 10, 1941 the "independent" Croation state was created. On April 12, 1941 a national committee declared Pavelić, at that time still in Italy, head of the new state, and two days later he assumed power under the title of *Poglavnik*, a Croatian equivalent of *Fuehrer* or *Duce*, the Leader. He at once dissolved the old political parties. The Croatian Peasant party, which comprised the great majority of the Croatian people, was excluded from participation in the government and its leader, Maček, went into retirement. On May 15 the Croatian Council of Ministers, whose president was Pavelić, proclaimed the re-establishment of the Kingdom of Croatia, extinguished as an independent state in 1102. On May 19, 1941 the King of Italy, Victor Emmanuel, designated his nephew, Aimone of Savoy-Aosta, Duc of Spoleto, as king of the new state. The new monarch was, however, only a figurehead and did not even enter his domain. On January 24, 1942 the Croatian Sabor (parliament) was re-established, with members who were not elected but appointed by Pavelić (44 of the appointed members refused to participate). The functions and legislative jurisdiction of the Sabor were not determined (*4*, pp. 67–68). Up to October 1942 six ministries were responsible for the entire economic welfare of Croatia.

Although Croatia had all the formal features of an independent state, the country was actually a puppet state the politics of which were decided abroad. At first Croatia was placed under the domination of Italy or made into a *de facto* protectorate. However, important points and industrial centers, especially Zagreb, were seized by Germany. The Croatian economy was dictated from Berlin and the economic organization of Croatia followed the German rather than the Italian pattern. Banking measures and price controls followed the German model. State control was exercised over trade, agriculture, industry, and raw materials. The farming laws were drafted after the German originals. A compulsory farmers' organization was modeled on the Nazi Reichsnaehrstand (the Reich Food Estate, i.e., the Reich Food Organization). The first international treaty signed in May 1941 was with Germany; according to its terms, 54,000 agricultural and industrial workers were to be dispatched to Germany. After the downfall of fascism in Italy the Germans took over the "independent" Croatian state completely.

Discriminatory measures.—The disruption of the economic existence of this portion of Yugoslavia was due in a great measure to the harsh discriminatory measures aimed at a complete elimination of "non-Croats" and "non-Aryans" from participation in the economic life of the country (*4*, pp. 85–91).

As far back as April 1941 the property of Zagreb's 12,000 Jewish population was confiscated and was to be distributed among the Croats. On October 30, 1942 a general decree was issued confiscating all property and all interests in property owned by Jews in Croatia. Jewish lawyers were disbarred, the licenses of Jewish physicians were revoked, all Jewish government employees were discharged, and all Jewish students were barred from universities. On May 21, 1942 all Jews with the exception of a special category of "honorary Aryans" were declared stateless, all Jewish organizations liquidated, and all synagogues were closed or converted into "Aryan" clubs.

Even greater discrimination was shown by the Croatian state toward the Serbs. In June and July 1941 the Ustaši engaged in a systematic persecution and even murder of Serbs. In some towns, e.g., Banja Luka in Bosnia, the Serb population was allegedly wiped out altogether. From May 6, 1941 up to the end of the Ustaši regime the dispossession of Serbs from their farms and their expulsion from the country went on. Many confiscatory measures were directed at Serbian property. The use of Cyrillic script was prohibited

throughout Croatia, Serbian schools were closed, and the teaching of the Serbian language in Croatian schools was forbidden. On the other hand, the teaching of the German and Italian languages was made compulsory in all secondary schools, and in every village where more than 10 German children lived a German school was opened. Serbs as well as Jews were barred from school. All Serbian educational endowments were confiscated.

Reorganization of the economic administration.—The Croatian government developed a scheme of strictly controlled economy after the German totalitarian model. The first compulsory trade cartels were established in 1941. In the spring of 1942 various economic associations were consolidated into four chambers—trade, industry, handicrafts, and finance. The working class was organized on the model of the German labor front. Compulsory trade associations for livestock breeding and animal products, milk and dairy products, poultry, oil-bearing plants, technical fats, leather, textiles, iron and other metals, etc., were put into operation.

The occupation authorities encouraged these organizations since by these means they were placed in the position of being able to direct the economic life of the country in a manner favorable for themselves and to drain the land of all supplies they needed.[1] This was precisely the aim of all compulsory trade organizations in the occupation period.

Trade and foreign trade control.—For all important agricultural products, as well as for firewood, textiles, and other commodities, there existed monopoly trading organizations. The trading monopolies for agricultural products were headed by a Central Office whose duties were to buy and distribute these products as well as to regulate the prices and consumption. Its director and the members of the board of supervisors were appointed by the Minister of Industry and Commerce. The means required for the operation of the Central Office were supplied by the government. Similar central monopolies were established for livestock and poultry.

In regard to foreign trade, the decrees of April 18 and 26, 1941 required all persons wishing to import or export goods to obtain

[1] *Editor's note*: In order to make the picture complete the following should be mentioned. It was Serbia and, especially, the Banat, which bore the burden of deliveries to Germany. Since Croatia was, in the wartime boundaries and under the impact of Italian occupation of some parts of its territory, an area of deficit food balance, it received during the war (before 1945) food supplies (bread, grain, sugar, potatoes) in considerable quantities from Germany, indirectly from the Banat and other, non-Yugoslav, surplus areas under German control (*6*, ch. 3).

permits from the Division for Foreign Commerce of the Ministry of Economy. On May 2, 1941 all businessmen's associations were instructed to submit information as to the import needs and the quantities of goods available for export. Exports were almost exclusively directed into Germany and Italy.

Farm control.—The collection and marketing of crops of cereals, potatoes, legumes, and oil-bearing plants were declared a state monopoly. The Pogod (p. 330), with its collection centers in all parts of the country and special control commissioners, was authorized to carry out all operations and transactions involved. A "farm inspection" was instituted in the form of special committees which estimated a farmer's crop surplus in grain, livestock, and other farm products, and on the basis of these estimates fixed the quotas which the farmer was obliged to deliver to the authorities. A threshing control was also established and the operation of all mills was placed under strict supervision. Finally, on July 9, 1942 an inspection of all food shipments and passenger luggage in trains, parcel posts, etc., was set up.

The whole industrial production was also subject to government control. On the other hand, the government wished to encourage the manufacture of consumer and other goods (sugar, chemical products for agriculture, etc.). However, these plans were abandoned because of the lack of building materials.

Price control.—Following the example of the German occupation authorities in Serbia, the Croatian government prohibited hoarding and price increases. The decree of April 17, 1941 directed that prices might not be increased above the March 1941 price level. The death penalty could be invoked for violations in certain cases. In addition to this "price-freezing" decree, the decree of April 16, 1941 prohibited withdrawals from banks in excess of 500 dinars per day. By the decree of September 19, 1941 the Office of Prices and Wages was established for the purpose of fixing prices, wages, and salaries, and for the setting up of a uniform control system.

However, the bulk of the legislation relative to price control consisted of hundreds of decrees establishing ceiling prices for many sorts of goods.

Rationing.—Because of a lack of foodstuffs and other consumer goods, rationing was introduced for food, textiles, clothing, and shoes. In regard to food quotas the consumers were divided into three categories: normal consumers, heavy workers, and children. The food rations in 1941 and the first half of 1942 were fairly large;

they were later reduced for bread, sugar, and oil. The *weekly* food rations in April 1943 were as follows:

Bread: normal consumer, 1,050 grams (reduced from 1,400 grams in June 1942); heavy worker, 2,100 grams
Meat (including bones): normal consumer, 150 grams
Sugar: normal consumer, 75 grams (reduced from 125 grams in January 1943)
Butter: normal consumer, 25 grams
Oil: normal consumer, 50 grams
Legumes: normal consumer, 115 grams; children under 2 years, 57 grams
Potatoes: normal consumer, 2,100 grams; children under 2 years, 1,050 grams
Milk: children under 2 years, 5¼ liters; 2–5 years, 3½ liters; old people, 2.1 liters
Eggs: 2 per month

During the harvest of 1941/42 (decree of March 23, 1942) every producer and each member of his family was allowed 76 kilograms of grain; he was also permitted to retain certain quantities for seed, as food for laborers, and feed for livestock. All cattle and pig raisers were permitted to slaughter 1 pig or 12 head of smaller animals (rabbits and poultry) yearly for their own consumption. During the harvest of 1942/43 the producers were permitted to retain for each member of their families 160 kilograms of small grain and 40 kilograms of corn. If the farmer did not grow corn he could retain 200 kilograms of any kind of grain; if he grew no other grain but corn he was allowed 225 kilograms of it. One-half of these quantities could be retained for children under 2 years of age. Farmers were also permitted to retain 200 kilograms of potatoes and 20 kilograms of beans, peas, or lentils. Producers whose farms consisted of more than 10 jochs (5.75 hectares) were allowed for seasonal workers 15 kilograms of wheat, 15 kilograms of corn, 10 kilograms of potatoes, and 5 kilograms of beans, peas, or lentils per joch.

However, despite all control measures the attempts at requisition were unsuccessful. The peasants rejected the new Croatian currency (kuna) established by Pavelić; nor did they show more confidence in the occupation mark or lira. They also resented the imprisonment of the popular leader, Maček. Passive resistance to government measures was widespread; the peasants restricted their sowings

and refused to bring food to the towns. It has been generally admitted that in 1941 and 1942 the harvests of cereals and root vegetables fell to approximately 50 percent of the prewar level (*7*). Accordingly, there was an acute shortage of food and widespread famine.

The general state of anarchy and the increasing scarcity of food led to the appearance and active operation of the black market in towns. A ring of black-market operators was arrested in Zemun in May 1942, and goods to the value of 3 million kunas were seized by the administration (*4*, p. 83). However, many more large-scale operators and black-market rings went on unchallenged, because Ustaši were involved.

SLOVENIA

During the war Slovenia was divided into two parts, of which the northern part was annexed to Germany and the southern to Italy.

In the German part the prices, wages, and working conditions were patterned after those prevailing in Germany. Likewise the compulsory trade associations, including the Reichsnaehrstand, were reproduced. Agricultural production was under the control of the German Commissioner for Food and Agriculture. The district food offices and special advisory centers for agriculture, stock breeding, horticulture, viticulture, etc., were set up. The German social and labor legislation with social assurance and compulsory labor service was introduced. The deportation of Slovenian peasants and the partisan movement worked to diminish agricultural production so that the German government was forced to import a part of foodstuffs (grain, potatoes, fats) from Germany. Food and other consumer goods were rationed. German rationing was adopted and the food situation in this part of Yugoslavia was not unbearable. Rations, especially for workers and miners (*Trbovlje*), were larger than in Serbia and Croatia.

In the "Provincia Liubiana," annexed to Italy, food conditions were adjusted to those of Italy. The food deficits were partially covered by products imported by the occupants, but conditions were worse than those of the northern part occupied by Germany. The ration of bread was small and the bread, when available, was of poor quality. The same was true of the fats. From August 1, 1942 on, the rations were reduced; there was a differentiation between normal consumers, heavy workers, and light workers. The daily rations

of bread and flour and the monthly rations of other staples were as follows (in grams):

Commodity and date of ration	Normal consumers	Light workers	Heavy workers
Bread and flour		Daily rations	
November 1, 1941			
Bread	200	300	400
Or mixed bread flour	170	255	340
Or corn flour	300	450	600
August 1, 1942			
Bread	150	150	150
Or mixed bread flour	130	130	130
Or corn flour	225	225	225
Rice		Monthly rations	
November 1, 1941	1,000	1,000	1,300
August 1, 1942	1,000	1,000	1,000
Paste			
November 1, 1941	1,000	1,000	1,300
August 1, 1942	1,000	1,000	1,000
Fats			
November 1, 1941 (lard, bacon, oil, or oleomargarine)	400	400	400
August 1, 1942 (margarine only)	400	400	400
Sugar			
November 1, 1941 and August 1, 1942	500	500	500
Fresh meat			
November 1, 1941	100	180	250
August 1, 1942	100	100	100
Soap			
November 1, 1941	150	150	150
August 1, 1942	100	100	100

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3 Mirko Lamer, "Kriegswirtschaftliche Einflüsse," in *Weltwirtschaftliches Archiv* (Kiel), Bd. 53, Heft 1, January 1941.

4 U.S. Treasury Dept., Off. Gen. Council, *Preliminary Study of Certain Financial Laws and Institutions: Yugoslavia* (prepared by Belle Mayer, Sept. 1, 1943).

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6 Karl Brandt, *The Management of Agriculture and Food in German-Occupied and Other Areas of Fortress Europe*, Vol. II of *Germany's Agricultural and Food Policies in World War II* (Food Research Institute Studies on *Food, Agriculture, and World War II*, Stanford, Calif., 1953).

7 *The Economist* (London), March 20, 1943.

CHAPTER 4

AGRICULTURE AND FOOD SUPPLY IN 1945 AND 1946

POSTWAR AGRICULTURAL PRODUCTION

No data are available on Yugoslavia's agricultural production in 1944. For 1945 there exist but approximate estimates made by the Economic Reporting Division of the UNRRA Mission in Yugoslavia and, with its participation, by the Combined Working Party of European Food Supplies in London (*1*, *2*, *3*). All these estimates were based on information given to UNRRA officials by the Yugoslav government, which information does not deserve complete credence since much of the basic data was lacking even to the government and was bound to be so lacking because of the prevailing chaos. Besides, the quoted data often appear at variance with each other.

Although it may be said that the war left Yugoslavia's agricultural production in a state of disruption, all regions did not suffer in the same manner. In the grain-deficit areas—Montenegro, Dalmatia, the larger part of Bosnia and Herzegovina, the southern regions of Croatia (i.e., Lika, Primorje, Gorski Kotor), and parts of Slovenia—where livestock breeding was the main source of income, the herds were dreadfully depleted; in some districts they were reduced to only 10 percent of the prewar level. Here the shortage of draft animals was the most important factor in preventing proper cultivation of the soil. During the spring and autumn of 1945 it was not an uncommon sight to see smaller fields being cultivated with the peasants themselves pulling the plows. On the other hand, in the grain-surplus areas the shortage of labor—especially in the Vojvodina where it was aggravated by the evacuation of the German minorities—combined with the shortage of draft power and equipment to curtail production. In the autumn of 1944 large areas of land remained unseeded. In the Vojvodina the wheat acreage planted was decreased to as little as 50 percent of normal. In 1945 the yield was only 7–7½ quintals per hectare instead of the normal 12 quintals, giving a total crop of wheat of 870,000 tons as compared with an average prewar crop of 2,570,000 tons. The decline of the corn harvest, owing to the inadequacies of tillage, late sowing, extension

of corn acreage into marginal areas for this crop, and the over-all retarding effect of the drought, was estimated at 45 percent. In the spring and autumn of 1945 great efforts were necessary to raise the production.

Table 3 compares the 1945 harvest estimates with prewar (1935–38) averages. As can be seen, the area sown became much smaller (except for oats and sugar beets) and yields declined, with the result that the production of all crops, except oats, also fell off. The decline of the total production of grain was estimated at 50 percent of the normal output.

To compute the net production available for human consumption, deductions must be made from the gross crop for seed, feed, industrial use, and waste (exports did not exist in 1945) as in the following tabulation (thousand tons):

Product	Gross production	Deductions	Net production
All grains	4,080	1,798	2,282
Wheat	870	400	470
Corn	2,525	837	1,688
Rye	75	35	40
Barley	220	140	80
Oats	335	335	...
Other grains	55	51	4
Potatoes	950	565	385
Pulses	96	15	81
Sugar beets	410	410	...
Sugar, refined	35	...	35
Vegetable oils	7	...	7
Fresh fruit	920	544	376
Fresh vegetables	350	70	280
Wine	234	...	234

The total net supply of grains for human consumption declined to 56 percent of the average prewar level, or to 1½ quintals per capita. Since there was also a decline in the net supply of potatoes and other agricultural products, the entire country, in the years immediately following the war, felt an acute shortage of vegetable food. In the passive regions, which had suffered the brunt of the war, this shortage was catastrophic.

During the fall sowing of 1945 and especially the spring sowing of 1946 the government applied every effort to organize both supply and distribution of seed, the utilization of tractors furnished by

TABLE 3.—AREA, YIELD PER HECTARE, AND PRODUCTION OF LEADING CROPS IN YUGOSLAVIA, 1935–38 AVERAGE AND 1945

(Thousand hectares; quintals per hectare; thousand tons)

Product	1935–38			1945			Decline of production (*percent*)
	Area	Yield	Production	Area	Yield	Production	
All grains	5,972	—	8,171	4,566	—	4,080	−51
Wheat	2,155	11.9	2,573	1,175	7.4	870	−66
Corn	2,655	17.2	4,575	2,401	10.5	2,525	−45
Rye	254	8.2	209	150	5.0	75	−64
Barley	420	9.5	401	324	6.8	220	−45
Oats	360	8.6	308	436	7.7	335	+ 9
Other grains	128	8.2	105	80	6.9	55	−48
Potatoes	261	60.0	1,577	—	—	950	−40
Pulses	—	—	143	—	—	96	−33
Sugar beets	27	191.0	516	38	107.3	410	−20
Vegetable oils	—	—	17	—	—	7	−59
Fresh fruit	—	—	1,356	—	—	920	−32
Fresh vegetables	102	—	576	—	—	350	−39

UNRRA, and the distribution of animal draft power. The following 1946 harvest figures indicate only a partial success for these efforts:

	Area (*1,000 ha.*)	Yield (*quintals per ha.*)	Production (*1,000 tons*)	Change from 1945 (*1,000 tons*)
Wheat	2,021	9.7	1,960	+1,090
Corn	2,437	8.7	1,975	− 550
Rye	201	8.4	169	+ 94
Barley	242	7.9	191	− 29
Oats	285	5.4	154	− 181
Potatoes	150	26.6	400	− 550
Pulses	5	46.0	23	− 73
Sugar beets	29	93.1	270	− 140

As compared with 1945, the area, yield per hectare, and production of wheat significantly increased, although they had not yet reached their prewar level. The production of rye also increased, but the yield per hectare and production of corn declined still further, as did the production of both barley and oats.

The situation with regard to livestock, both as draft power and as the source of food products, was even more unsatisfactory. The following data show the seriousness of the livestock position (in million head):

	Million head			Percent of 1939	
	1939	1945	1946	1945	1946
Horses	1.27	0.50	0.61	39	48
Cattle	4.26	1.91	2.45	45	58
Sheep	10.15	4.80	6.35	47	53
Goats	1.87	1.01		54	
Pigs	3.50	1.50	2.73	43	78
Poultry	21.40	10.63	16.00	50	75

In so far as these figures may be trusted, they show a certain uptrend of livestock resources after wartime destruction. However, in 1946 the numbers of stock still amounted to only 50–80 percent of 1939. The best recovery was shown by pigs and poultry, the poorest by horses, followed by sheep and goats, which were raised in the most devastated regions. The work of reconstruction was somewhat speeded up by the importation of livestock by UNRRA, but in comparison with the total losses this assistance was small. From April 15, 1945 to December 31, 1945 UNRRA delivered 10,900 head of livestock, and up to December 1, 1946, 28,200 head. Delivered livestock consisted of the following kinds of animals (in thousands): horses, 13.7; mules, 9.6; cows, 3.8; bulls, .1; poultry, 1.0. Even the total delivered horses and mules represented only 5 percent of the half-million head which remained after the war. However, these deliveries were important because of their distribution in the most devastated mountainous regions where the loss of horses and cattle as draft power could not be compensated by motor power. In the plains regions the UNRRA deliveries of tractors and motor vehicles were more important for the reconstruction of agricultural production.

In 1945/46 the production of animal foodstuffs represented only one-third to one-half of the prewar production, as is shown by the following data (in thousand tons):

Product	1935–38 av.	1945/46
Meat	310.6	135
Pig fat	91	30
Milk	3,000	1,500
Cheese	20	20
Butter	19	7.5
Eggs	52	23
Fish	15	4.6

In view of the sharp reduction of agricultural and livestock pro-

duction, the Yugoslav food conditions in the first postwar years were characterized by undernourishment of the population of all districts of the country and starvation in the deficit districts.

The government, immediately after the liberation of the country, applied every effort toward the increase of area sown and the raising of the productivity of agriculture. Aiming at rational land utilization it worked out a sowing plan adapted to the peculiarities of different localities. Certain areas were established in which each farmer was compelled to grow a certain quota of a specific industrial plant. The cultivation of these plants was encouraged by the offer of good prices for the product (for instance, from 330 dinars for a quintal of soya beans to 920 dinars for a quintal of sesame seed). A special organization was set up to mobilize all resources, to organize brigades of tractors, to move livestock, and distribute seed. In each republic, region, and village special planting committees were organized and machine tractor stations were established.

Only about 3,000 tractors were available, of which at least 1,000 were out of commission for lack of spare parts or necessary repair equipment. The remaining tractors had to be used very intensively. The additional burden, coupled with the inferior quality of lubricating oil obtained from Rumania, caused extremely rapid wear of machinery. With the arrival, in April 1945, of the UNRRA mission the plan was elaborated by incorporating the use of the existing and imported tractors and other farm machinery. The decree of April 6, 1945 laid down rules for the organization of MTS and the training of tractor drivers and mechanics. At the time of the promulgation of this bill there were in existence 120 MTS (Slovenia 53, Vojvodina 37, Croatia 16, Serbia 13, and Montenegro 1). At the end of May 1945, 1,800 persons had been trained as tractor drivers and another 1,200 were trained in June; during late fall an agricultural machine school was founded at Zemun with UNRRA technical experts. UNRRA tractors began to arrive in July 1945, and by the end of October there were about 2,000 of them, but only 630 tractor plows had been received. By spring 1946 there were 2,932 tractors and 10,967 tons of other farm machinery and spare parts, and in May 1947 the total number of tractors was between 5,000 and 6,000.

In order partially to remedy the shortage of livestock in the worst-hit regions the government in the late spring of 1945 began to restock the decimated areas by moving in stock from regions which had been relatively less devastated. The prewar Agricultural Extension or Advisory System was reorganized and enlarged. Of-

fices of Agricultural Reference and Farm Advice were established, dealing with local national committees and farmers' committees. Agricultural offices generally also had a Veterinary Division.

DEFICIENCY OF FOODSTUFFS AND UNRRA RELIEF

The following figures serve to give a picture of the deficiency in foodstuffs in postwar Yugoslavia. According to estimates, during July–December 1945 the net home production of food could supply the population with an average of 1,729 calories per capita per day. With the addition of gross imports of 565 calories per capita, the total apparent consumption per capita of the population would have been 2,295 calories (*2*, p. 44). A survey of food conditions in the starvation zone showed the following nutrient value of the daily diet per capita, received from domestic supplies (in grams):

	Proteins	Animal proteins	Fats	Calories
Bosnia and Herzegovina..	28.1	4.7	25.2	1,923
Lika	36.8	11.1	27.9	1,658
Dalmatia	31.5	6.6	31.4	1,658
Average	32.1	7.4	28.1	1,746

In 1945/46 the net requirements of wheat, corn, and rye for the various zones were estimated by UNRRA (*1*, Rept. 1, pp. 10–11) on the following assumptions: the net production of these grains is 2,198,000 tons; this production is distributed among various zones according to population, consumption, and deficiency; the total population is 15 million people, of which 3 million are in the starvation zone (80 percent deficient), 2.0 million in the deficiency zone (50 percent deficient), 2.5 million in towns (100 percent deficient), and 7.5 million in the surplus zone; the annual consumption rate per capita is 220 kilograms for the rural districts and 144 kilograms for towns, which corresponds to a "heavy worker" ration of 600 grams daily, and a normal ration of 400 grams. On this basis the net requirements of grain were estimated as follows:

Zone	Population (*million*)	Net production (*1,000 tons*)	Net requirements (−) or surpluses (+)	
			Per capita (*kg.*)	Total (*1,000 tons*)
Starvation zone ...	3.0	132	−176	−528
Deficiency zone ...	2.0	220	−110	−220
Towns	2.5	...	−144	−360
Surplus zone	7.5	1,746	+ 12.8	+ 96
Total	15.0	2,198	—	−1,012

All these estimates were, of course, quite arbitrary. The figure for the population was too high, and that of net grain production too low. Realizing this, UNRRA assumed that 700,000 tons rather than one million would be required to cover the deficit.

For 1946/47 Yugoslavia's food deficit, as compared with the prewar situation, was estimated as follows (in thousand tons; 2, p. 55):

Product	Production		Deficit in 1946–47 (as compared with 1935–38)
	1935–38	1946–47	
Wheat	2,405[a]	1,960	445
Corn	4,255[a]	1,975	2,280
Pulses	120[b]	23	97
Rice	23[c]	3	20
Fats	138	45.6	92.4
Sugar	70.6	37	33.6
Salt	180[d]	54	126
Total	7,191.6	4,097.6	3,093

[a] Exports amounting to 7.5 percent deducted.
[b] Exports of 30,000 tons deducted.
[c] Imports of 18,500 tons added.
[d] Imports of 50,000 tons added.

These approximative estimates show a catastrophic deficit, especially of corn (which is the chief bread grain in the poor regions), fats, and salt. The canceling out of this deficit by means of normal imports was not possible during these years. No export goods, foreign currency, or credit existed at that time for Yugoslavia, and international trade had not yet been re-established. The only source for meeting the food emergency was the UNRRA food supplies.

The agreement between the Yugoslav government and UNRRA was signed March 24, 1945. The Yugoslav UNRRA mission opened its offices in Belgrade on April 15, 1945 and began activities immediately by lending assistance to means of transportation and their reconstruction. This was particularly urgent since one of the objectives of the partisans had been the destruction of enemy communications, and Allied bombers had established as one of their principal targets the railway centers, while the retreating German forces had covered their line of retreat by destroying highways, railroads, and bridges. When liberation occurred, the Yugoslav communication system was utterly destroyed. The rolling railway stock and road vehicles were also in a state of complete disrepair. The follow-

ing figures indicate the rolling stock in 1938, 1941, and 1946 (in thousands; *4*, p. 20):

Item	1938	1941	Jan. 1946	Apr. 1946
Locomotives	2.3	2.3	1.1	1.1
Passenger cars	5.1	5.0	2.2	1.9
Freight cars	53.7	52.0	22.3	29.1

Repair workshops were either destroyed or badly damaged and their capacity was much lessened.

The total financial resources of UNRRA operations, concluded by the end of June 1947, amounted to about 3.7 billion dollars. Of this amount about 3.0 billion were spent on supplies, exclusive of shipping costs. Yugoslavia's share in the supply budget was 424.8 million dollars or 14.4 percent of the total (*5*, pp. 402–03). The following tabulation shows this amount apportioned among the various classes of supplies in the UNRRA relief program for the period from April 15, 1945 to the end of 1946, compared with actual shipments up to November 30, 1946 (*4*, pp. 52–53):

Item	Program		Actual shipments	
	Million dollars	Percent	Million dollars	Percent of program
Foodstuffs, feeding stuffs, and soap	136.3	32.1	132.4	97
Transport and industrial rehabilitation	109.2	25.7	79.9	73
Clothing, footwear, textiles	83.1	19.6	72.9	88
Agricultural rehabilitation	37.2	8.7	26.3	71
Military shipments, unclassified (mostly food and clothes)	34.7	8.2	34.7	100
Medical and sanitary supplies	19.9	4.7	11.8	59
Awaiting specification	4.2	1.0	—	—
Total	424.8	100.0	358.1	84

By November 30, 1946 shipments representing (in value) 84 percent of the total program had been completed, leaving 16 percent to be shipped by the end of 1946 or in the first months of 1947.

According to official Yugoslav estimates, by the end of November 1946, 96 percent of the railroad lines, 78 percent of the bridges, 70 percent of the prewar railroad cars, and 50 percent of the locomotives were repaired and put into operation. The river floating stock and the numbers of draft animals reached approximately 50 percent of the prewar figures. Only the number of motor vehicles, especially trucks, surpassed the prewar figures, owing to the UNRRA deliveries.

The deficiencies and destruction of the communication system slowed down the delivery and distribution of food by UNRRA.

The immediate task of UNRRA, in the field of food, was (*a*) to feed, almost completely, about 3 million persons in the starvation zone whose small supplies of grain had been exhausted by October 1945; (*b*) to feed partially another 2 million in the 50 percent deficient zones; and (*c*) to provide supplies of milk to children in deficient areas and in all towns where indigenous supplies were not adequate.

The grain and flour needs were estimated to be 69,000 tons a month: 54,000 tons to meet the needs of the 3 million persons of the starvation zone which was 80 percent deficient in grain, at the monthly rate of 18 kilograms per capita; and 15,000 tons to meet the needs of 1½–2 million people in regions assumed to be 50 percent deficient in grain, at the rate of 9 kilograms per capita monthly. A grain ration of 18 kilograms per capita monthly, or 220 kilograms a year, corresponded to the "heavy worker" ration of 600 grams daily (1,900 calories). This was, of course, a very high rate; however, it must be remembered that grain and flour represented virtually the whole of the food intake since only very small supplies of other foods were available from domestic production and the UNRRA imports of other foods were also too small for general distribution and fell, as a rule, to the more privileged classes. Although some of the industries for the processing of fruit, vegetables, fish, and oil seeds, and for preserving meat, had suffered less war damage than other branches of industry, yet the lack of raw materials, fuel, transport, spare parts, and lubricants combined with other difficulties to prevent even these surviving branches from contributing very much to the people's food supply.

The first shipments of relief supplies of food to Yugoslavia were delivered in December 1944 by the military liaison authorities through the only functioning ports of Split and Dubrovnik. By April 15, 1945 receipts totaled 39,900 tons, of which some 30,000 were grain and flour. On April 15, 1945 UNRRA assumed responsibility for the relief program but continued to deliver military supplies. By June 1945 it began to deliver also relief stocks while continuing through June and July to deliver military stocks. In the first months of the operations of UNRRA the food arrivals fell far short of the required 69,000 tons a month. Had this state of affairs continued, the food situation in the winter of 1945/46 would have become extremely acute. However, arrivals soon showed a marked

improvement, and the estimated demands for grain and flour were met for the first time in October 1945. From October to December 1945 the arrivals were sufficient not only to meet the current emergency needs of the deficient regions, but also to build up some winter stock piles. In January 1946 the arrivals fell off sharply as a result of a strike in the United States and throughout 1946 they did not resume the volume of the deliveries reached in the fourth quarter of 1945. The rising prices of foodstuffs in the United States and the exhausted UNRRA food budget for Yugoslavia slowly diminished the UNRRA supply of food by November 1946. Again Yugoslavia became entirely dependent upon its own domestic food production. Since this production, as we have seen, had become much lower than that of prewar times, the food situation in Yugoslavia remained precarious.

Figures of total arrivals of food from military and UNRRA stocks during the period from April 1945 to January 1946 are given in Appendix Table III, page 365.

The peak of the UNRRA food supply deliveries was reached in the last quarter of 1945, after which they gradually tapered off. During the 21 months of its activities UNRRA delivered 778,000 tons of cereals and cereal products (grain and flour), which amounts to 450,000 tons per year. This represented only 5 percent of the prewar Yugoslav gross production of cereals and only 11 percent of the 1945 production. A portion of the cereals delivered by UNRRA was allocated for seed and for feeding livestock. The percentages for meat and fats were higher, but the absolute quantities of these products were much smaller.

The distribution of UNRRA foodstuffs in the period from April 1945 to October 31, 1945 among the various parts of Yugoslavia was as follows (in percent of total tonnage deliveries of each commodity):

	Croatia & Dalmatia	Bosnia & Herzegovina	Slovenia	Montenegro	Serbia & Vojvodina	Macedonia	Miscellaneous
Cereals	40	30	10	10	—	—	10
Meat and fish	45	25	15	2.5	5	—	7.5
Fats	35	30	20	7.5	—	—	7.5
Milk	35	22.5	17.5	—	12.5	12.5	—
Vegetables	40	30	20	2.5	—	—	7.5
Coffee	25	27.5	17.5	7.5	12.5	2.5	7.5
Sugar	30	12.5	15	5	37.5	—	—
Other	40	37.5	7.5	—	—	—	15
Total	39	28	11	About 10	4	Under 1	8

Although Macedonia was a deficit area, only very small quantities of UNRRA supplies were distributed to this area because of lack of communication. No cereals, milk, or fats were received from UNRRA by Serbia as a less deficient federal unit connected with the well supplied Vojvodina. The main bulk of foodstuffs was delivered to Croatia and Dalmatia and to Bosnia with Herzegovina, i.e., the localities which represented the focal points of partisan warfare.

In conclusion one may say that UNRRA shipments were of vital importance for some regions of Yugoslavia, but they were not so large as to raise the food consumption of the population as a whole to anything like the prewar level.

COLLECTION OF DOMESTIC FOODSTUFFS

The UNRRA food supplies should therefore be considered as an important but small addition to the domestic agricultural production. Beginning with 1946 these supplies began to diminish rapidly. Therefore the task of paramount importance was to organize the collection of domestic foodstuffs and restore the normal movement of grain from surplus to deficit regions.

For the collection of grain surpluses in the Vojvodina a state grain-purchasing company, Poljopromet, was instituted in August 1945 with headquarters at Novi Sad. It had 22 regional centers, and branches in every village. By provisions of the decree of August 4, 1945 all owners of bread grain were compelled to sell to Poljopromet within 20 days all their surpluses of the 1945 crop. A later decree fixed purchase prices and extended the obligation to sell to the 1946 crop. A similar decree was issued regarding pork fat, but this proved impracticable. The local Communist national committees were made responsible for the enforcement of these decrees. A commission of 3 persons in each village was to determine the quantity to be handed over by each household. The quantities which the producer was permitted to retain, by the decree, were as follows (*1*, Rept. 1, p. 7):

Each peasant and heavy worker	800 gm. grain or 600 gm. flour daily
Other workers	600 gm. grain or 450 gm. flour daily
Other persons	400 gm. grain or 300 gm. flour daily
Seed per joch	104 kg. wheat, barley, rye, or oats

The following quantities of corn could be retained (in kilograms): 50 per person; 700 per hog or boar; 600 per head of breeding livestock; 500 per horse; 350 per head of cattle; 250 per pig

for fattening; 8 per fowl; 16 per joch for seed. Persons who attempted to evade these requirements and responsibilities were brought before special courts for sabotage with the threat of confiscation of all property.

The government planned, in 1945, to be able to collect 400,000 tons of grain, but up to the end of that year only 250,000 tons had been collected with noncollected stocks in the Vojvodina estimated at 50,000 tons. Warehouses were mostly empty and the stocks in the mills were very low. The shortage of transport restricted the movement of grain. According to the government plan the Vojvodina was to supply deficit areas with the following quantities: Bosnia and Herzegovina, 90,000 tons; Croatia, 80,000 tons; and Slovenia, Montenegro, and Macedonia, 50,000 tons each. But these quantities were not delivered; Macedonia, for instance, received actually only 28,000 tons.

The milling mixture and grain extraction rates were also controlled for maximal utilization of grain. In Belgrade bread consisted of 25 and later 40 percent of corn. The same percentage of corn was also set for Macedonia and other districts. In April 1946, in Belgrade, the bread mixture was 65 percent wheat, 25 percent corn, and 10 percent soya.

The legal extraction rate was 80 percent in Croatia and 90 percent in Serbia; for corn it was 95 percent.

The decree on "The Purchase of Cereals in the Economic Year 1946–47" of April 26, 1946 made certain concessions to peasants for the purpose of increasing the delivery of grain to markets. In contrast to the decree of 1945, the decree of 1946 permitted the farmers not only to keep certain quantities for the use of the household (for personal consumption per person, 250 kilograms small grain or 300 kilograms corn; for seed, 180–200 kilograms small grain or 25–30 kilograms corn per hectare) but also to retain a percentage for free sale at whatever price might be obtained. This additional quantity amounted to 10–40 percent of the produced small grain and up to 20–50 percent of corn, according to the size and character of the holding. Small landholders with 3 hectares and under were completely freed from compulsory sales of grain to the state. Since, under the new system, the quantity of grain which was allowed for sale at free prices was dependent on the production, it was now in the interest of the farmer to produce and declare as much as possible. Upon delivery of specified quantities of grain, privileges were also accorded in the form of extra coupons

for the purchase of various rationed goods. However, even with all these inducements the peasants refused to sell their grain, fearing not to have sufficient supplies for the feeding of their animals through the winter. In November 1946 a new set of controls was established, regulating the collection of local surpluses of potatoes for distribution to deficit areas.

RATIONING

A system of food rationing was decreed by the Central Yugoslav government on July 31, 1945. According to this decree all major foodstuffs were to be distributed against ration cards in all towns and all villages of the deficit areas. On September 24, 1945 a scale of maximum monthly ration issues was published for all of Yugoslavia. However, Macedonia and the Vojvodina did not adopt a ration card system until March 1946. The system was based on different requirements for heavy workers (R-1), light workers (R-2), and normal consumers (G); in towns there were further categories of children 0–2 years (D-1) and 2–7 years (D-2), expectant and nursing mothers (T), and nonhospitalized sick persons. On December 24, 1945 rations were introduced for the militia (local civil police) and forestry workers.

In May 1946 the total ration-receiving population was 8.5 million, of which approximately 5 million were in starvation and deficit areas. However, as early as July 1946 the entire population, as well as the various consumer categories, was estimated as follows (in millions; *2*, p. 52):

Total population	15.32
Nonself-suppliers	3.14
Children under 2 years	.17
Children, 2 to 7 years	.40
Normal consumers	1.52
Light workers	.65
Heavy workers	.40
Rural population	12.18
In deficit areas	1.71
In self-sufficient areas	10.47

In the above estimate the number of persons was obviously exaggerated, and the number of issued ration cards was in excess of the number of actual consumers. Accordingly, on September 20, 1946 a revision of the rationing system was announced and an

attempt was made to organize a stricter control over the issuance of ration cards and the sale of rationed foodstuffs.

Table 4 shows a ration scale established by the Central Ministry of Commerce and Supply on April 10, 1946, indicating rations for various categories of consumers. The rations of the first four categories, especially those of forestry workers and heavy workers, would have been adequate had they been actually available. However, the remaining categories, especially the main body of normal adult consumers, were allocated rations which, even if fully delivered, were insufficient. The distribution of rationed food was still more unsatisfactory in October 1946 (see Appendix Table IV, p. 366).

Rations for normal consumers, i.e., the majority of the population, kept on declining in the deficient Adriatic zone until they reached 1,000–1,100 calories daily. This was, essentially, a "starvation ration" which consisted mainly of bread with an infinitesimal addition of fats, and a total absence of meat or milk. Moreover,

TABLE 4.—DAILY RATION SCALE FOR VARIOUS CATEGORIES OF CONSUMERS IN 1946*

(*Grams*)

	Forest workers	Heavy workers	Militia	Light workers	Expectant mothers	Invalids	Children 2–7	Children 0–2	Normal consumers
Wheat flour ..	—	600	—	450	—	300	300	—	300
or bread ...	800[a]	800	800	600	400	400	400	200	200
White flour ...	—	33	20	25	33	17	17	17	17
Potatoes	120	—	—	—	—	—	—	—	—
Beans and peas	120	106	186	80	53	53	53	53	53
Fats and oils..	40	25	20	18	23	20	11	11	11
Sugar	16	16	15	11	16	16	11	16	5
Meat and fish:									
Fresh	66	53	53	40	120	73	26	26	26
Canned	—	26	26	20	60	36	13	13	13
Coffee	—	5	2.5	3	—	—	—	—	—
Salt	20	16	20	16	16	16	16	16	16
Cheese	—	10	—	50	660	16	16	16	16
Milk, fresh....	—	—	—	—	500	500	300	300	—
Rice	—	—	—	—	—	10	16	10	—
Total calorie value ...	3,574	3,256	2,909	2,336	2,259	2,028	1,740	1,514	1,478

* Data from UNRRA Eur. Regional Off., Div. Operational Anal., *Agriculture and Food in Jugoslavia* (Operational Anal. Papers 23, London, February 1947), p. 49.

[a] Corn.

everything but bread was issued most sporadically, often not at all. Various small changes in regulations introduced from November 1946 helped little. Thus, a third category of "medium heavy workers" was added; the category "children 2 to 7" was extended to 2–14 years; students of secondary schools over 14 years of age and university students were equalized with the light workers, etc.

The actual ration issues were even less adequate. In 1946 rations were not complied with in Slovenia; in Dalmatia neither meat nor fish appeared on rations from January to March, and in April of the same year the grain issue was reduced by 50 percent. At Sušak the normal-consumer daily intake amounted in January 1946 to only 767 calories. At Doboj and Banja Luka (Bosnia) the general population received for the month of January 1946 only 6–8 kilograms of cereals instead of 9–18 kilograms. In Slavonia, formerly one of the richest surplus areas, in January 1946 the monthly ration issues of cereals amounted to 5 kilograms for normal consumers, 7.5 for light workers, and 10 kilograms for heavy workers, instead of 9, 13.5, and 18, respectively (*1*, Rept. 4, pp. 25–27).

FOOD PRICES

The foremost requisites for the stabilization of prices and the fight against black markets were the unification and stabilization of currency. After the liberation the following currencies were circulated in Yugoslavia and were in 1945 presented for exchange to the new dinar currency (in billions): Croatian kunas (241.0), Serbian dinars (43.4) and Yugoslav 1,000-dinar notes (.1), Bulgarian leva (3.4) and promissory notes (.7), Italian lire (1.9), Hungarian pengö (.5), German reichsmarks (.4) and reichskreditscheine (.009), Slovenia Rupnik's promissory notes (.2) and partisans' promissory notes (.1). The total sum of kunas, dinars, and Slovenian notes amounted to 284.7 billions. Both the dinar and the kuna had depreciated, but the depreciation rate of the kuna was far greater than that of the dinar. In November 1944 the value of the dinar had fallen to one-tenth of its previous purchasing power. In 1945 the dollar rose on the black market from 1,000 to 3,500 dinars although the official fixed exchanged rate was 200 dinars to the dollar and 800 to the pound sterling. In March 1945 the kuna was being offered at 15,000 to the pound sterling although the official rate was 3,200.

The decree of April 10, 1945 proclaimed the new dinar as unified currency. The foreign exchange value of the new dinar was fixed at

the prewar level, i.e., 50 dinars to the dollar and 200 to the pound sterling. However, the fixed rate had little significance since there was no foreign trade in either dollars or pounds. The international purchasing power of the new dinar was intended to be 20 times that of the old dinar. Each individual was allowed to exchange and convert to the new currency up to 100,000 dinars; all holdings above this figure were to be deposited with the banks in exchange for certificates. Thus, the 284.7 billion of old currency were converted into 14.2 billion of new dinars, essentially the total that had been in circulation in 1941 (14.3 billion).

Salaries and wages in new dinars were reduced to ½–⅕ their level in old dinars. Prices, however, were reduced roughly to 1/20 of the old level, and in the middle of May 1945 the basis for price fixing was the 1939 level plus about 50 percent for agricultural and 30 percent for industrial products. The purpose of these different levels was to correct the prewar discrepancy (scissors) between the prices of two groups of goods.

Since prices were reduced much more than wages and salaries, the real wages and salaries increased. This increase, however, remained in effect but a short time since it was impossible to maintain the prices at the new low level when the new dinars came into circulation with increasing government expenditures. By the end of 1946 the circulation of the new currency had increased to 20.5 billion, by the end of 1947 to 29.4, and by the end of 1948 to 35.7 billion dinars. This was a typical postwar inflation accelerated by the large investments of the Five-Year Plan.

The official price of bread, for example, fixed in May 1945 at 3 dinars per kilogram, had risen to 5 dinars in August 1945 and to 7 dinars in January 1946. According to the estimates of the UNRRA mission the cost of living, judging by the official prices of food, had increased by 300 percent as compared with the prewar level. The wages of the lowest paid workers had increased by more than 300 percent so that their real wages were probably somewhat higher than before the war if they could have obtained all needed goods at official prices. Wages and salaries for better paid groups had risen by 150–200 percent so that in their case there had been a falling off of their real income. In the highest paid group, salaries had been reduced by 50 and 20 percent of the prewar level so that the real income had decreased considerably.

This was the level of real wages and salaries, considering the official ceiling prices of food. However, because of the insufficiency

of rations and even more so of actual issues, not only the middle classes but also the workers' families were forced to buy additional quantities of food on the black market at high prices. Table 5 shows official and black-market prices in Belgrade in January 1946 as compared with prewar prices.

As can be readily seen from this table, the official prices of food had increased to 285 percent of the average prewar prices, and the black-market prices to 944 percent. Especially high on the black market stood prices of fuel and clothing. These high black-market

TABLE 5.—RETAIL PRICES OF CONSUMERS' GOODS IN 1938 AND 1946*

(*Dinars*)

Commodity	Unit	Average price in 1938	Price, January 1946		Index for 1946 (1938 = 100)	
			Official	Black market	Official	Black market
Food:						
White flour, wheat	1 kg.	3.50	9	23	257	657
Bread	1 kg.	3.17	7	—	221	—
Potatoes	1 kg.	1.77	6	15	339	847
Beans, dry	1 kg.	5.15	7	20	136	388
Pork	1 kg.	15.62	49	80	314	512
Fats	1 kg.	15.40	46	150	299	974
Milk	1 l.	2.77	9	14	325	505
Butter	1 kg.	33.40	80	200	239	599
Eggs	each	0.69	3	10	435	1,449
Sugar	1 kg.	14.0	33	350	236	2,500
Coffee	1 kg.	70	124	900	177	1,286
Rakija	1 l.	18	80	120	444	667
Average of food					285	944
Clothing:						
Shirts	each	75	140	800	187	1,067
Men's shoes	1 pr.	192.50	440	4,000	228	2,078
Women's shoes	1 pr.	171.66	380	3,000	221	1,748
Men's wool suiting	1 m.	243	375	3,500	154	1,440
Poplin (cotton)	1 m.	18	45	350	250	1,944
Average of clothing					280	1,655
Other commodities:						
Coal	1 ton	283	1,200	4,000	424	1,413
Wood	1 cu.m.	142.71	756	3,000	530	2,102
Laundry soap	1 kg.	10.62	35	160	329	1,507
Average of other commodities					428	1,674
Average of all above commodities					278	1,246

* Data from UNRRA Mission-Jugoslavia, *The Program of Reconstruction in Jugoslavia*, Rept. 1, January 1946, ch. v, p. 6.

prices denote that in 1946 the majority of the population of Belgrade suffered heavily from a shortage of food, fuel, and clothing. It is true that the official costs of electricity had increased only by 34 percent, of tram fares by 33.3 percent, of cigarettes by 66.6 percent (10 *Zeta* cigarettes cost 3 dinars in 1938 and 5 dinars in 1946). In contrast, an apartment of three rooms, which in 1938 cost 1,500 dinars, in 1946 cost only 750 dinars, thanks to rent control.

Speculation and corruption among the employees of the socialized supply organizations were widespread despite very severe punishments, including sentences to long imprisonment and even death. The black marketing and speculation continued into 1947 and 1948; in 1947 the courts passed 1,580 sentences for illegal trade practices, speculations, and economic sabotage. Committees for combating speculation attached to national committees passed 2,247 sentences of monetary fines. In 1947 monetary fines and confiscated goods amounted to something like 60 million dinars. During the period January–March 1948, 1,315 crimes against the economic order were uncovered. During these three months nearly 500 tradesmen were deprived of their trading permits (*6*).

We find the following illustrations of the food situation in Istria, now annexed to Yugoslavia, in a book by a Soviet newsman who had traveled in 1946 through Yugoslavia and had stayed in the country for about 3 months (*7*, pp. 124–28 *passim*). The book was written in the period of the *entente cordiale* between Yugoslavia and the Soviet Union and is very favorable to the new Yugoslavia.

> Pasin—a commercial and administrative center of Istria . . . The peasants (Croatian) brought to the city to Italian tradesmen bread, grapes, fruit, cattle, and received in exchange matches, salt, cotton goods. The merchants cheated them mercilessly with full connivance of the law which, of course, was not protecting the defenseless peasants. Today this state of affairs is no more, but neither is there any trade in the city. The stores are empty, many of them are shut altogether, and outside of the black market it is difficult to obtain the most elementary household staples. Naturally, however, neither the citizens nor the peasants bemoan the past: no one wished for the old times back.

And this is how the inhabitants of Istria ate in 1946:

> The Chairman of the National Committee invited us for a midday meal at the local inn. A girl in a soiled wrapper placed on the table before each person a slice of black stale bread, put down plates with some dark mess. I did not wish to ask the name of this concoction, but felt its sourish-salty, repulsive taste for quite some time after. Then we were served thick coffee without milk or sugar.

Here is the description of a meeting with a peasant woman:

"Well, how is life?" Ivanka sighed, dropped her eyes. "What is our life!" A young Croatian woman dressed in a ragged blouse showed comrade Mitja a tin cup: "Here, look at this. What would you call this? Water? We call this our dinner. This is our life!"

CITATIONS

1 UNRRA Mission-Jugoslavia, *The Program of Reconstruction in Jugoslavia* (Rept. 1, January 1946; Rept. 2, February 1946; Rept. 4, May-June 1946).

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3 Combined Working Party of European Food Supplies, *Food and Agriculture Prospects in Yugoslavia, 1945–46* (Rept. 45-2, London, January 1946).

4 UNRRA Eur. Regional Off., *Transport and Rehabilitation in Jugoslavia* (Operational Anal. Papers 27, London, 1947).

5 Jozo Tomasevich, "Postwar Foreign Economic Relations," in *Yugoslavia*, R. J. Kerner, ed. (United Nations Series, Berkeley, Calif., 1949).

6 Speech of the Minister of the Interior of Slovenia, quoted in *Borba* (Belgrade), May 19, 1948.

7 F. Nasedkin, *Dorogi i vstrechi* [*Ways and Meetings*], ed. by Control Committee of the Young Communist League "Young Guard" (Moscow, 1947).

APPENDIX TABLES

TABLE I.—ESTIMATES OF PRODUCTION, EXPORTS, AND DOMESTIC UTILIZATION OF FOOD OF ANIMAL ORIGIN IN YUGOSLAVIA, 1934–38 AVERAGES*

(*Thousand tons*)

Commodity	Data of the FAO			Tomasevich estimates		
	Production	Exports	Domestic utilization	Production	Exports	Domestic utilization
Beef and veal	98	8	90	90.0[a]	9.7	80.3
Mutton and lamb..	84	—	84	55.0	4.6	50.4
Goat meat	10	.5	9.5	11.0	.6	10.4
Pork	131	16	115	126.0	17.0	109.0
Poultry	32	12.5	19.5	29.0	12.8	16.2
Offal	22	—	22	—	—	—
Total meat ...	377	37	340	311.0	44.7	266.3
Lard	77	11	66	84.0	19.0	65.0
Milk	3,000	—	2,500[b]	1,232.0[c]	21.8	1,210.2
Eggs	44	12	32	42.0	13.0	25.0[d]
Fish	6.5	3	3.5	14.5	2.7[e]	11.6

* Data from United Nations, FAO, *Food Balance Sheets* (Washington, D.C., April 1949), pp. 139–40; Jozo Tomasevich, *Peasants, Politics, and Economic Change in Yugoslavia* (Stanford, Calif., 1954), Table 38.

[a] Including 1,000 tons buffalo meat.

[b] With deduction of 500 thousand tons for animal feed and waste.

[c] Excluding quantity fed to animals.

[d] Excluding 4,000 tons for reproduction, breakage, and spoilage.

[e] Exports of 3,100 less imports of 400 tons.

TABLE II.—FOREIGN TRADE IN AGRICULTURAL PRODUCTS, 1938 AND 1939*

(Thousand tons except as indicated; million dinars)

Commodity	Exports				Imports			
	Quantity		Value		Quantity		Value	
	1938	1939	1938	1939	1938	1939	1938	1939
I. Farm products of vegetable origin								
Cereals	587.5	308.4	694.2	475.4	1.5	1.6	4.3	4.1
Rice	.0	.0	.0	.0	22.2	17.9	66.8	60.1
Vegetables	34.3	20.5	86.1	62.9	4.4	2.4	10.0	4.8
Fruit	71.5	107.7	191.4	308.2	24.3	21.9	84.8	74.2
Flavorings, spices.	.1	.1	.3	.5	9.1	9.1	71.5	68.5
Oil, fruit, and seed	6.8	3.9	26.3	21.3	14.2	12.0	45.2	43.8
Fodder plants	21.0	32.8	16.5	26.1	.0	.0	.0	.0
Industrial and medical plants..	27.7	29.5	350.0	417.5	28.4	21.1	282.1	249.1
Other products	.6	2.3	3.4	11.1	.2	.1	4.4	3.4
Total	743.6	505.2	1,368.3	1,322.9	104.5	86.0	569.1	508.1
II. Farm products of animal origin								
Live animals:								
1,000 tons	4.0	4.0	595.3	710.8	.0	.0	1.7	1.2
1,000 head	562.3	713.9			.2	.1		
Meat, fresh and processed	20.1	23.5	275.5	343.8	.0	.0	.0	.0
Milk and eggs	15.7	15.5	157.7	160.4	.0	.0	.1	.1
Animal fats	6.8	8.3	95.4	141.3	7.9	6.4	37.3	27.9
Wool and skins	5.9	7.0	172.6	215.5	13.2	5.2	240.4	124.1
Fish and fish products	3.0	2.5	15.3	12.4	.5	.2	4.9	2.3
Other products	3.2	2.5	8.5	10.9	1.8	1.3	11.1	11.1
Total:								
1,000 tons	58.7	63.3	1,320.2	1,595.1	23.4	13.1	295.5	166.8
1,000 head	562.3	713.9			.2	.1		
III. Products of food-processing industries and related products								
Milled products	12.5	3.5	43.3	14.7	2.3	6.2	14.8	27.3
Beverages	3.1	10.6	11.8	37.0	0.3	0.2	1.7	1.5
Other products	78.5	37.2	96.3	47.1	1.4	0.4	2.1	1.5
Total	94.1	51.2	151.4	93.8	4.0	6.8	18.7	30.3
IV. Unspecified foodstuffs	1.8	2.2	27.3	42.9	0.4	0.3	5.0	4.4
Total value	...	...	2,867.2	3,054.7	...	...	880.3	709.6

* Data from Yugoslavia, Office du commerce extérieur, *Statistique du commerce extérieur du Royaume de Yougoslavie pendant l'année 1939* (1940), and Statistique générale d'état, *Annuaire statistique, 1940* (1941), pp. 234–63.

TABLE III.—ARRIVALS OF FOOD FROM MILITARY AND UNRRA STOCKS, APRIL 1945 TO NOVEMBER 1946*

(*Thousand metric tons gross*)

Commodity	Apr.–June 1945	July–Sept. 1945	Oct.–Dec. 1945	Jan.–Mar. 1946	Apr.–June 1946	July–Sept. 1946	Oct.–Nov. 1946	Total
Cereals and cereal products	69.7	101.0	306.3	158.1	112.3	30.7	—	777.9
Meat	5.4	4.4	6.0	10.6	10.2	1.3	.2	38.0
Fish	.6	4.6	4.0	3.6	—	—	—	12.7
Cheese	—	.3	1.9	2.7	.1	.2	—	5.2
Evaporated milk	.2	2.2	8.8	14.6	2.9	3.4	.3	32.5
Dried milk	1.9	4.9	2.8	6.9	1.9	.1	.3	18.9
Pulses	2.7	19.6	4.1	—	—	—	—	26.4
Sugar	4.0	13.6	3.7	—	24.0	9.5	—	54.8
Fats and oils	2.6	4.1	2.1	.4	3.3	4.1	.1	16.7
Quartermaster foods[a]	—	—	27.2	86.4	.3	.6	.5	115.0
Total	87.0	154.5	367.0	283.3	155.0	49.9	1.4	1,098.1

* Data from UNRRA Eur. Regional Off., Div. Operational Anal., *Agriculture and Food in Jugoslavia* (Operational Anal. Papers 23, London, February 1947), p. 43.

UNRRA Mission-Jugoslavia, *The Program of Reconstruction in Jugoslavia*, Report No. 1, January 1946, gives the following, differing figures (in thousand tons): April–June 1945—total, 90.3, from military stocks, 76.4; July–September 1945—total, 179.8, grain and flour, 115.6; October–December 1945—total, 376.2, grain and flour, 298.0.

[a] Surplus army packed rations, canned and dried army foodstuffs. The following were the most important items (totals shipped October 1945–April 1946; in thousand gross long tons): Army packets, 60.4; meat, 19.6; fruit and vegetable juices, 17.3; jams and marmalade, 11.4; butter and margarine, 1.1 (see *Agriculture and Food in Jugoslavia*, p. 45).

TABLE IV.—DAILY FOOD RATIONS IN OCTOBER 1946, BY DISTRICTS*
(*Grams*)

Commodity		Slovenia	Split (Dalmatia)	Sarajevo (Bosnia & Herzegovina)	Karlovac (Croatia)	Sušak (Littoral)
Wheat flour	A	—	558	600	116	116
	B	—	416	450	116	116
	C	—	258	300	33	33
White flour	A	50	8	33	8	8
	B	33	8	25	8	8
	C	16	8	16	8	8
Bread	A	—	—	—	600	600
	B	—	—	—	400	400
	C	—	—	—	300	300
Corn	A	620	—	—	—	—
	B	465	—	—	—	—
	C	310	—	—	—	—
Oatmeal	A	16	—	—	—	—
	B	16	—	—	—	—
	C	16	—	—	—	—
Macaroni	A	—	66	—	66	33
	B	—	50	—	50	25
	C	—	50	—	50	25
Sugar	A	16	16	16	16	16
	B	11	11	11	11	11
	C	5	5	5	5	5
Fats and oils	A	25	25	25	25	25
	B	16	16	18	16	16
	C	6	8	11	8	8
Meat and fish	A	37	—	26	—	—
	B	14	—	20	—	—
	C	—	—	13	—	—
Total caloric value.	A	2,607	2,483	2,553	2,448	2,288
	B	1,904	1,833	1,906	1,791	1,660
	C	1,204	1,191	1,249	1,160	1,058

* Data from UNRRA Eur. Regional Off., Div. Operational Anal., *Agriculture and Food in Jugoslavia* (Operational Anal. Papers 23, London, February 1947), p. 51.

A—heavy workers; B—light workers; C—normal consumers.

AGRICULTURE AND FOOD IN BULGARIA BEFORE AND DURING WORLD WAR II

By
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(Edited by P. STANLEY KING)

Eli and Fritz v. Philipp
in gratitude

INTRODUCTION

ECONOMIC ACTIVITY, 1926–46

If we measure economic activity according to changes in physical volume of total net output or in physical volume of commodity transactions we find that the world economic depression of 1930–32 did not manifest itself in Bulgaria in its full force. The process of contraction, which started in 1929, was interrupted in 1930 and 1931 by a considerable increase of real net output and real transactions as well. This is due to the fact that Bulgaria is predominantly an agricultural country: great changes in natural abundance of the major crops (cereals and tobacco) have a dominant effect on the general cyclical movement in the economic sphere of life.

A recession was felt from 1932 to 1934. The recovery set in definitely in 1935 and led to an expansion which reached its highest point in 1941. This can be seen from Appendix Tables I, II, and III (pp. 448–49). Tables I and II show the changes in real net output of goods (material goods including electric energy) from 1926 to 1942 and from 1939 to 1946. Unfortunately, for methodological reasons they cannot be combined so as to give an uninterrupted impression of the development.

Table III gives an idea of the changes in real transactions. It contains figures on cash payments of the National Bank which may be considered as a substitute for the total volume of commodity transactions in Bulgaria (*1*, p. 5). Yet cash payments of the National Bank deviate from the total value of commodity transactions when the velocity of circulation of money changes considerably. That was the case in 1940–41.

From a theoretical point of view it would be proper to divide the period 1935–47 at its turning point (1941). However, in order to examine the influence of the war upon agriculture and food, we must divide the periods differently. In this study we shall distinguish the following three periods: the *prewar period* 1935–39, the *war period* 1940–45, and the *postwar period* 1946–47.

CITATION

1 Nicola Köstner, "The Influence of Prices on Some Aspects of Economic Development in Bulgaria," *Publications of the Statistical Institute for Economic Research* (University of Sofia), 1938, No. 1.

CHAPTER 1

DEVELOPMENT OF AGRICULTURE DURING THE PREWAR PERIOD, 1935–39

CHANGES WITHIN THE CROPLAND: TRANSITION TO LABOR- AND CAPITAL-INTENSIVE CULTURES

No other five-year period in the history of Bulgarian agriculture is marked by such a high level of production as the period of 1935–39. In four successive years (1936–39) the total quantity of cereals harvested exceeded 3.3 million tons. But this was mainly the result of temporarily high yields per hectare; the total cropland increased only by 196,000 hectares, or about 5 percent. At the same time important changes took place in the distribution of crops. Table 1

TABLE 1.—UTILIZATION OF LAND, 1929/30 TO 1938/39, YEARLY AVERAGES*

Category	1929/30 to 1933/34 (*percent*)	1935/36 to 1938/39 (*percent*)	1929/30 to 1933/34 (*1,000 ha.*)	1935/36 to 1938/39 (*1,000 ha.*)	Absolute change (*1,000 ha.*)
Area sown	31.0	33.0	3,192	3,399	+207
Fallow land	4.9	4.6	511	472	— 39
Arable land	35.9	37.6	3,703	3,871	+168
Permanent meadows ...	3.0	2.9	310	296	— 14
Multienniel cultures (bush and tree crops)	1.2	1.6	125	167	+ 42
Cropland	40.1	42.1	4,138	4,334	+196
Uncultivated area (including forests and pastures)	59.9	57.9	6,177	5,981	—196
State area	100	100	10,315	10,315	

* Data from Bulgaria, Direction générale de la statistique, *Annuaire statistique du Royaume de Bulgarie, 1941* (1941).

shows the changes in the utilization of land: area sown and multiennial cultures increased, while uncultivated area (including forests and pastures), meadows, and fallow land decreased (*1*, pp. 30–46).[1]

[1] The crop year 1934/35 is excluded from the analysis for lack of official data on areas sown. In 1935 the unit of statistical observation was changed: the *farm* (operational unit) was taken instead of the *land property* (ownership unit). This reform

This picture already indicates the tendency of intensification of Bulgarian agriculture at that period. A detailed analysis based on crops confirms the above statement. Table 2 reveals that in the growth of area tobacco, oil-bearing plants, fiber plants, vegetables, and multiennial cultures played a leading role. The crops which expanded fastest are shown in Appendix Table IV. All these crops are labor- and capital-intensive cultures. Hence the prewar period of 1935–39 not only established a record in physical volume of agricultural production, but was also a time of transition to a higher stage of farming.

The changes, however, were not so great as to permit our speaking of a transformation of agriculture in Bulgaria, for cereals still occupied 78 percent of the area sown. But the tendency of transformation was very strong: the changes affected an area of approximately 300,000 hectares or 7 percent of the total cultivated area.

The evolution toward labor- and capital-intensive cultures was not confined to particular geographic regions. Yet it centered in the region of Plovdiv (the old Roman city of Philippopolis) in the Maritza Valley, and in the valley of the river Struma in the region of Küstendil (the old Roman city of Pautalia). Irrigation played an important role in this development (*2*).

With the exception of sunflower, which was produced mainly for home consumption, the most important among the expanding cultures—namely tobacco, soybeans, table grapes, and strawberries—were grown for export. In 1938 about 80 percent of the tobacco, 60 percent of the soybeans, 50 percent of the table grapes, and 55 percent of the strawberries were exported. The growing production of fiber plants had to meet the increasing demand of the home textile industry for raw materials. Of those expanding cultures which were produced for export, the greater part went to Germany (see Appendix Table V, p. 450).

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coincided with a reorganization of the administration of the country and was not successful in the first year. The collected data were tabulated but not published (*2*, p. 886; see also *3*, p. 767).

In 1937 another reform was made in the collection of statistical data on agricultural production. The random sampling method in the observation of area sown and yields per hectare was introduced. The sample comprised 4 percent of the villages (200 out of 5,000). In every village of the sample all farms were observed.

The increase of the cultivated area from 1936 to 1937 might be attributed partly to the change in the method of observation.

Since 1946 the complete count method has been applied. The whole country is now divided into 1,300 statistical districts (on the average comprising four villages each) headed by a "Statistical Controller." The Controller supervises the collecting of data by the local authorities especially in the field of agricultural statistics.

TABLE 2.—DISTRIBUTION OF CROPLAND, 1929/30 TO 1938/39, BY GROUPS OF CROPS*

(*Yearly averages*)

Groups of crops	Area		Change	
	1929/30 to 1933/34 (*1,000 ha.*)	1935/36 to 1938/39 (*1,000 ha.*)	(*1,000 ha.*)	(*percent*)
Food cereals	1,577	1,619	+ 42	+ 3
Feed cereals	1,098	1,051	− 47	− 5
Tobacco	27	39	+ 12	+ 44
Sugar beets	12	10	− 2	− 17
Oil-bearing crops	114	207	+103	+ 99
Fiber plants	17	52	+ 35	+206
Beans	87	90	+ 3	+ 4
Potatoes	14	19	+ 5	+ 36
Melons	37	49	+ 12	+ 32
Vegetables	13	20	+ 7	+ 54
Fodder crops[a]	204	233	+ 29	+ 14
Other crops	2	10	+ 8	
Area sown	3,192	3,399	+207	+ 7
Fallow land	511	472	− 39	− 8
Permanent meadows	310	296	− 14	− 5
Multiennial cultures	125	167	+ 42	+ 34
Cropland	4,138	4,334	+196	+ 5

* Data from Bulgaria, Direction générale de la statistique, *Annuaire statistique du Royaume de Bulgarie, 1941* (1941).

[a] Rotation meadows and other feed crops.

INCREASING DEPENDENCE ON THE GERMAN MARKET

The growth of agricultural production in Bulgaria and the improvement of economic conditions abroad, especially in Germany, Italy, Great Britain (before the recession of 1937), the United States, Poland, Switzerland, and Greece, during the prewar period (1935–39) led to a great increase of Bulgaria's foreign trade. The physical volume of exports and imports gradually approached and finally surpassed the respective record figures of 1931 and 1929 as shown in Appendix Table VI (see *4*, p. 3).

The most striking feature of this development was the growing participation of Germany in both exports and imports. As 98 percent of Bulgaria's exports consists of farm products, raw or manufactured, and as imports, to a great extent, form that part of real income of the farm population which corresponds to its cash income (farm products sold), the growth of trade with Germany meant a growing depend-

ence of Bulgarian agriculture on Germany's economic situation and economic policy as well. As Table 3 shows, Germany's share in Bulgaria's yearly exports of merchandise rose from 8 percent in 1923 to 68 in 1939; in about the same period (1921 to 1940) her share in Bulgaria's yearly imports went up from 17 to 70 percent. Since the physical volume of Bulgarian exports rose about 60 percent between 1926 and 1938, and the German share in Bulgarian exports during the same time was tripled, Bulgarian exports to Germany were in 1938, in real terms, roughly five times as large as in 1926. (On Germany's participation in Bulgaria's foreign trade during World War II, see Appendix Table XXI, p. 462.)

In German-Bulgarian trade before World War II two stages can

TABLE 3.—GERMANY'S PARTICIPATION IN BULGARIA'S FOREIGN TRADE, 1921 TO 1940*

Year	Exports			Imports		
	Total (*million leva*)	To Germany (*million leva*)	To Germany (*percent*)	Total (*million leva*)	From Germany (*million leva*)	From Germany (*percent*)
1921....	2,801	278	10	2,976	498	17
1922....	5,926	976	17	4,066	885	22
1923....	4,343	351	8	5,154	1,034	20
1924....	5,876	1,039	18	5,678	1,226	22
1925....	6,242	1,251	20	7,834	1,730	22
1926....	5,618	1,095	20	5,631	1,009	18
1927....	6,627	1,529	23	6,197	1,303	21
1928....	6,231	1,739	28	7,109	1,526	22
1929....	6,397	1,912	30	8,325	1,850	22
1930....	6,191	1,621	26	4,590	1,065	23
1931....	5,934	1,748	30	4,660	1,084	23
1932....	3,383	880	26	3,471	900	26
1933....	2,846	1,025	36	2,202	841	38
1934....	2,505	1,083	43	2,247	902	40
1935....	3,253	1,562	48	3,009	1,608	54
1936....	3,910	1,860	48	3,181	1,940	61
1937....	5,019	2,163	43	4,926	2,699	55
1938....	5,578	3,284	59	4,934	2,563	52
1939....	6,065	4,110	68	5,197	3,403	66
1940....	7,019	4,152	59	7,028	4,889	70

* Data from I. Stefanoff, "The Foreign Trade of Bulgaria After the World War," *Publications of the Statistical Institute for Economic Research* (University of Sofia), 1938, No. 2-3, pp. 63, 67; and Bulgaria, Direction générale de la statistique, *Annuaire statistique du Royaume de Bulgarie, 1941* (1941), p. 508.

be clearly distinguished: before and after 1933. In that year, relative shares of Germany in Bulgarian exports and imports rose suddenly to a higher level—from 20–30 up to 40–70 percent. This was due not only to the fact that in both countries the physical volume of production increased steadily after that year (see Appendix Table VII, p. 451), but also to the German-Bulgarian Clearing Agreement, signed in 1932, and the German-Bulgarian Commercial Treaty of 1932 (February 17, 1933). The commercial treaty paved the way for mutually favorable treatment. The clearing agreement meant more. For Germany it was an instrument to increase German trade without depreciating the reichsmark as valued in leva. From the Bulgarian standpoint it meant disguising the departure from precrisis gold parity in order to stimulate the export of Bulgarian agricultural products. Accepting the official exchange rate of the reichsmark (roughly 33 leva for 1 reichsmark) for payments in blocked reichsmarks, which was what the clearing transactions really were, Bulgaria agreed that the lev should be exchanged for the reichsmark, in terms of gold, at a lower rate than for any free currency. This was possible because the reichsmark and the lev were *de facto* almost equally depreciated on the world exchange market. The exchange rate of the German-Bulgarian clearing corresponded to the purchasing power parity or, more exactly, to the precrisis purchasing power disparity between the reichsmark and lev. There was some overvaluation of the reichsmark, but it did not prove to be very great, about 2–5 percent, judging from the negative exchange premiums which were observed in the private compensation deals in Bulgaria during the years 1935–40 (*5*, p. 628; *6*).

The question arises: why did Germany prefer an exchange rate which stimulated imports to Germany but was bound to hamper German exports, instead of a depreciated rate of, let us say, 25 leva for 1 reichsmark, which would have had the opposite effect upon foreign trade? The answer is that this proved to be—in connection with a clearing agreement and an appropriate price policy—the more effective method of increasing trade turnover: once balances of blocked reichsmarks had accumulated, the partner was eager to clear them by buying German goods.

The conjunctural feature, however, does not fully explain the development of German-Bulgarian trade. There are some long-run factors which must also be considered. Ever since World War I Germany had been the chief market for tobacco and eggs—the first and third most important Bulgarian export articles (cereals being

the second). This can be seen from Appendix Table VIII, page 451.

It should be observed that figures on trade after 1937 used in this section refer to Germany including Austria.

FOREIGN EXCHANGE POLICY OF THE NATIONAL BANK OF BULGARIA

From December 12, 1923, when the monopoly for foreign exchange was introduced, to the end of 1939—for 16 years—the National Bank of Bulgaria was the actual promoter of the commercial policy of the country. The stability of the external value of the national currency being once established as a guiding principle of economic policy, the National Bank was legally authorized to control foreign trade. Having the control of credit and money circulation in its hands too, the Bank, through the foreign exchange regulations which it issued and through the international payment agreements which it concluded, influenced the agricultural and industrial production of the country in a very effective way (see also *7*, p. 36).

The world economic crisis of 1929 did not shake the policy of stable currency in international transactions previously adopted. Consequently the general price level in Bulgaria followed the downward movement of prices abroad. When the balance of payments deteriorated, the difficulties were met by severe exchange restrictions introduced in October 1931. But foreign exchange transactions were further effected at the official gold parities as they emerged from the external depreciations of the other currencies.

In June 1933, after internal prices had fallen about 50 percent from the 1929 level, the National Bank changed its policy. It relaxed the foreign exchange restrictions by introducing the so-called private compensation deals: exporters were allowed to sell to importers a part of their "devisen" at a free rate of exchange. The surplus above the official rate was called the "exchange premium."

The introduction of the private compensation deals was the second step in Bulgaria's departure from the precrisis gold parity, the conclusion of the German-Bulgarian clearing agreement being the first (*8*, esp. pp. 50–52). About one-third of the total turnover of foreign trade passed through the private compensation market during 1937 and 1938 (36.0 and 35.7 percent respectively, according to *9*, p. 16). As the remaining two-thirds were governed by clearing transactions with Germany, the actual external depreciation of the lev was now complete. In June 1936 the National Bank fixed the ceiling of the exchange premium at 35 percent. This percentage may

be considered as the extent of the external depreciation of the lev during the prewar period (hence the devaluation was 26 percent, measured from the legal gold parity).

Thus, besides the growth of domestic production and the improvement of economic conditions abroad there was a third factor acting toward expansion of Bulgaria's foreign trade—the new foreign exchange policy of the National Bank.

The regime of private compensation deals had two very peculiar features: (*a*) the nondisposable quota, i.e., the part of the "devisen" to be delivered to the National Bank at the official rate of exchange, was not the same for all kinds of commodities; and (*b*) the exporter was not free to choose his partner as regards the kind of commodity to be imported. Consequently the exchange premiums differed not only in kind of foreign currency but also in kind of commodity (export article). The "Compensation List of Commodities," as it developed during the prewar period, was based upon the principle that the export of Bulgarian goods for which demand in the world market was strong should be charged with a high delivery quota and be dependent on the import of "luxury" goods. Table 4 gives an idea of this discrimination (see *10*, p. 22).

The foreign exchange policy of the National Bank contributed greatly to the progress of labor- and capital-intensive cultures. Internal prices of tobacco, exportable fruits and vegetables, etc., went

TABLE 4.—NONDISPOSABLE (DELIVERY) QUOTAS IN PRIVATE COMPENSATION DEALS, 1935 TO 1937*

Kind of commodity	Percentage of the foreign exchange to be delivered to the National Bank		
	1935	1936	1937
Vetch	60	40	30
Corn	50	30	30
Beans	30	30	30
Eggs	30	30	30
Tobacco	30	30	30
Pigs	20	20	20
Hides	20	20	20
Dairy products	15	15	15
Bacon	10	10	10
Fruits and vegetables	0	0	0
Lard	0	0	0
Attar of roses	0	0	0

* Data from C. Bobtcheff, "La politique de commerce extérieur de la Bulgarie après la guerre," *Publications of the Statistical Institute for Economic Research* (University of Sofia), 1938, No. 4.

up more than the general price level (see Table 5), and their area, as we have seen, expanded (7, p. 25).

TABLE 5.—PRICES OF TOBACCO, 1936 TO 1939*

Year	General level of wholesale prices (*index numbers*)	First stage prepared tobacco, "Plovdiv yaca," frontier export price (*index numbers*)
1936.....	100	100
1937.....	113	120
1938.....	118	143
1939.....	118	168

* Data from Bulgaria, Direction générale de la statistique, *Annuaire statistique du Royaume de Bulgarie, 1941* (1941), pp. 577–78.

CHANGES IN REAL INCOME OF FARM POPULATION FROM FARMING

In a country in which agricultural production is carried on by privately owned family farms, predominantly for their own consumption, and where neither hired labor nor hired capital plays an important role, individual real income from farming may be defined as net value of agricultural production at constant prices (i.e., physical volume of net output) per head of farm population. Economic conditions in Bulgaria are such as to allow the use of this definition for a large part of the country. Agricultural production in the other part is conducted for exchange (production for the market) and real income depends on formation of prices.

For the prewar period there are figures on net value of crop and animal production at constant prices published by the High Economic Chamber. Although the delimitation between factor costs and user costs of production is not precise and no adjustment for changes in inventories has been made, these figures serve our purpose. The figures in Table 6 trace the changes in physical volume of agricultural net output per head of farm population within the period 1936–40. As 1936 is the base year they do not show the increase in comparison with any earlier epoch.

To ascertain the variations of the real income of the farm population producing on an exchange basis it is necessary to distinguish two parts—that represented by home consumption and that from marketings—of the real income of farms, and to investigate each separately, i.e., to find out the changes in quantities of goods produced and consumed or invested in the farm and the changes in the

TABLE 6.—PHYSICAL VOLUME OF AGRICULTURAL NET OUTPUT, 1936–40*

Year	Net value of crop and animal production at constant prices (1939)		
	Total (*million leva*)	Per head of farm population (*leva*)	(*index numbers*)
1936.....	23,695	5,265	100
1937.....	24,635	5,438	103
1938.....	24,226	5,312	101
1939.....	25,836	5,628	107
1940.....	22,773	4,940	94

* Data from Bulgaria, Haute chambre d'économie nationale, *Le revenu national de la Bulgarie, 1935–1945* (Sofia, 1947), p. 131 (first and second columns of Table 180 only). The farm population was taken as 73 percent of the total population; see *6*, p. 13.

purchasing power of cash receipts from marketings. All we need in order to make such an investigation for the average farm are data on yield per hectare, the marketing ratio of output, cash receipts from marketings (or producers' prices), and the expenditure for constant quantities bought. The index in column 6 of Table 7 is constructed according to this method (referring to the marketing part of real income only, since the rest is in this case negligible). It shows the development of the gross real income of *tobacco farms* as the relation between the index of value of yield per hectare (cash receipts from marketings per unit of land planted with tobacco) and the index of farmers' expenditure for constant quantities of food and industrial products bought.

TABLE 7.—GROSS REAL INCOME OF TOBACCO FARMS, 1934–39: PURCHASING POWER OF GROSS INCOME PER HECTARE*

Year	Yield of tobacco per hectare (*kg.*)	Producers' price of tobacco (*leva*)	Value of tobacco yield per hectare		Expenditures at constant quantities (1934–35) (*index numbers*)	Gross real income (*index numbers*)
			(*leva*)	(*index numbers*)		
	(1)	(2)	(3)	(4)	(5)	(4 ÷ 5)
1934.....	947	24	2,273	100	100	100
1936.....	980	25	2,450	108	98	110
1937.....	910	31	2,821	124	106	117
1938.....	830	44	3,652	161	114	141
1939.....	956	43	4,111	181	115	157

* Data from Bulgaria, Direction générale de la statistique: *Annuaire statistique du Royaume de Bulgarie, 1937, . . . 1939,* and *. . . 1941; Bulletin mensuel,* 1946, Nos. 10, 11, and 1947, No. 11; and *Revue de la statistique générale de la Bulgarie et Bulletin mensuel,* 1945, No. 1.

The gross real income of tobacco growers has increased considerably. This conclusion can be safely drawn, as the typical tobacco farm produces almost nothing but tobacco and sells its whole output.

Unfortunately this is not the case with the most important type of farms in Bulgaria—the "cereal farm." Here we no longer are concerned with a monoculture production, or with a marketing ratio of 100 percent. Production is not fully specialized and the marketing ratio is not known,[2] as it necessarily varies from year to year, depending on the yield per hectare and on the relation between prices of agricultural and industrial products. Hence the figures in Appendix Table IX (p. 452), referring to cereal farms producing predominantly wheat and computed by the same method used in Table 7, should not be interpreted in the same way as in the case of tobacco. They do not measure changes in gross real income but merely give an indication in what direction and how sharply the marketing part of the real income of wheat growers changed.

TABLE 8.—PRICE SCISSORS FOR AGRICULTURAL AND INDUSTRIAL PRODUCTS, 1935 TO 1939*

Year	Wholesale price indexes			Ratio of agricultural to industrial prices
	All 72 commodities	Domestic agricultural products	Domestic industrial products	
	(1)	(2)	(3)	(2 ÷ 3)
1934–35 av....	100	100	100	100
1935.....	101	103	100	103
1936.....	103	109	97	112
1937.....	117	126	105	120
1938.....	120	134	104	129
1939.....	122	140	100	140

* Data from Bulgaria, Direction générale de la statistique, *Bulletin mensuel*, 1938, No. 8, and 1943, No. 1.

The development of the price system, having a bearing on the variation of the real income, the "scissors" of prices in juxtaposition to agricultural and industrial products, is given in Table 8. *The*

[2] The Agricultural Survey of 1934, made by the Central Statistical Office according to the sampling method of purposive selection, supplied data on the "balance of receipts and expenditures" (both in terms of quantities) for different farm products. In 1938 P. Egoroff computed for 1926—for all farms taken together —the marketing quotas for the different kinds of products (in terms of value) and the ratio of total value of quantities produced but not used in the producing farm or in its household to gross value of total output (*11*, p. 161). In both cases the data refer to a particular year only, and do not serve our purpose.

scissors opened in favor of agriculture. The ratio of changes in prices for agricultural and industrial products does not differ very much from the changes in gross real income of tobacco farms (Table 7). However, both index number series contain higher figures than the series "net value of crop and animal production at constant prices per head of farm population" (Table 6, index numbers). This means that real income of the so-called subsistence farm population did not improve so much as real income of the farm population producing for the market.

The general conclusion arrived at is that the *real income* of the *farm population in Bulgaria during the years 1935–39 increased in spite of the rise in price of the commodities bought by farmers.*

CITATIONS

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CHAPTER 2

DEVELOPMENT OF AGRICULTURE DURING THE WAR, 1940–45

STRUCTURE OF AGRICULTURE

Thanks to the fact that in August 1946 there was a new Census of Agriculture—the third since 1926—it is possible not only to give a picture of the structure of Bulgaria's agriculture at the end of the war, but also to ascertain in a general way the changes in this structure during the period 1934–46.

Table 9, containing data on farm population, farms, and plots, taken in conjunction with Table 10, is a proof of the small-peasantry

TABLE 9.—FARM POPULATION, FARMS, AND PLOTS, 1934–46*

Item	December 1934	December 1946 including Southern Dobruja	August 1946 excluding Southern Dobruja
Farm population	4,446,784	5,170,000	4,840,000
Number of farms:			
All farms	884,869	1,094,904	1,039,072
Farms in rural communities	798,709	979,557	926,517
All land in farms (hectares)	4,368,429	4,894,289	4,436,427
Plots	11,862,158	12,205,949	11,936,473
Farm population per hectare.	1.02	1.06	1.10
Farm population per farm	5.0	4.8	4.7
Average area of farms (hectares per farm)	4.9	4.5	4.3
Plots per farm	13.4	11.0	11.5
Average area of plots (hectares per plot)	0.37	0.40	0.37

* Data from Bulgaria, Direction générale de la statistique, *Bulletin mensuel*, 1937, No. 1.

character of agriculture and of the splitting (parceling) of farms in Bulgaria.[1]

About 90 percent of the farms are located in rural areas. Of all

[1] The farm population for 1946 has been computed on the basis of the percentage of farm population in total population according to the Census of Population of December 31, 1934 (*1*, p. 46). The quota has the tendency to fall slowly: 1920, 74.99; 1926, 74.23; 1934, 73.2 (see p. 392 below, note 5).

TABLE 10.—DISTRIBUTION OF FARMS AND LAND IN FARMS BY SIZE OF FARMS, 1934–46*

(*Percent*)

Size of farms (*hectares*)	Number of farms			Land in farms		
	1934	1946[a]	1946[b]	1934	1946[a]	1946[b]
Under 1	13.5	14.4	14.9	1.3	0.6	1.7
1–2	13.5	14.5	14.9	4.0	4.8	5.1
2–5	36.1	38.2	38.8	24.7	29.0	30.7
5–10	26.2	25.3	24.5	36.9	38.6	39.3
10–20	9.2	6.8	6.2	24.3	19.5	18.6
20–30	1.1	0.7	0.6	5.2	3.5	2.9
30 and over..	0.4	0.1	0.1	3.6	3.0	1.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

* Data from Bulgaria, Direction générale de la statistique, *Bulletin mensuel*, 1937, No. 1.
[a] Including Southern Dobruja.
[b] Excluding Southern Dobruja.

farms, 69 percent, covering 38 percent of all land in farms, exploit only 1 to 5 hectares. Most of the farms under 1 hectare, situated near cities, are vineyard holdings operated by persons for whom agriculture is a secondary occupation. The greater part of the farms under 1 hectare which are situated near villages are tobacco farms. The farm groups "20–30 hectares" and "over 30 hectares" do not exist any more. According to the agrarian reform, introduced after 1946, which limited land property to 20 hectares, these farms have been abolished and their land has been incorporated into the State Land Fund.[2]

As a rule ownership and operation, i.e., land properties and farms, coincide (see Appendix Table X, p. 452). In spite of this, lease of land, particularly of single plots, is a common phenomenon. In 1934, 95 percent of the farmers owned their farms. About 30 percent of them were at the same time tenants: they took additional land on lease. The lessors belonged mostly to the farm group "under 2 hectares" (*3*, p. 214). Farms were operated by the farmers and their relatives. According to the Population Census of December 31, 1946, there were at that date only 28,279 permanent workers on farms (*2*, p. 118).

[2] The official report (*2*, p. 118) is not very precise so far as statistical methodology is concerned. The data on farms are referred to as data on "agricultural property" ("propriétés agricoles") from the Population Census of December 31, 1946. In fact, by the Agricultural Census of August 1946 they were for the first time collected separately from the demographic census. Only the data on farm population in this report are really from the Population Census of December 31, 1946.

In 1934 the average acreage of farms was 4.9 hectares. In 1946 it amounted to 4.3 within the old frontiers of the country, and to 4.5 hectares within the new. Frontier changes have altered the proportion of the size groups of the farms and also the average size of the farms because the province of Southern Dobruja, which was returned by Rumania to Bulgaria in the autumn of 1940, has a different agricultural structure and a relatively large area (769,600 hectares).

The number of plots per farm decreased from 13.4 to 11.5 (prewar frontiers). As the average size of plots remained the same, this does not reflect consolidation of plots but diminishing of farm size.

Splitting up (parceling) of farms in Bulgaria can be statistically traced back to 1926, the splitting up of land properties even further—to 1897 (*4*, p. 87). The average acreage of the farm within the prewar frontiers has decreased 14 percent since 1934 and 25 percent since 1926. The underlying factors were the growth of the population and the system of inheritance—the distribution of the plots among all the children of the farm owners. To what extent the process of land division has been carried on can also be seen from the results of a sampling survey made in 1944 by the Regional Economic Chambers. In seven villages in which plots had been pooled (grouped) for the purpose of "land consolidation," in order to get one block per farm, the number of farms rose within 10 years from 5,408 to 7,663 or 42 percent (*5*, p. 52).

GOVERNMENT MEASURES CONCERNING STRUCTURE OF AGRICULTURE

After the liberation of Bulgaria from the Turks in 1878 there was no "agrarian problem" in the sense that conflicting interests of landlords and landless peasants had to be reconciled, for no such social classes existed after the abolition of the *tchifliks*, the large Turkish real estates—remnants of Ottoman feudalism. Yet another problem, that of the discrepancy between the rapid growth of the farm population and the slow increase of the crop area, became of utmost importance. It was first taken up by government measures in 1921 when the Labor Land Property Act was issued. This act was replaced in 1924 by the Labor Farms Act which underwent several changes before 1942. In 1946 a new agrarian act was passed which had much in common with the Labor Land Property Act of 1921.

These two lines of legislation differed in their origins as well as in their aims. The acts of 1921 and 1946 were the results of a revolutionary spirit—they were meant to enforce the redistribution of

private land. The acts of the intermediate period, on the contrary, were evolutionary in character—they aimed at colonization on the basis of public land.

The war saw the passage of the Labor Farms Act of May 23, 1941, a modification of the act of 1924. The aims of this act were formulated as follows: "To create a State Land Fund and to promote the agrarian policy of the state." The most important organs in the application of the act were the local "committees for labor land farms" in the communities and the "Council of Land" in the Land Directorate of the Ministry of Agriculture. Members of the local committees were: a state official (*agronom*), the mayor, certain farmer representatives appointed by the authorities, and the secretary of the local administration. The local committees had to carry out the whole procedure of allocating the land, letting on lease the free plots of the State Land Fund, fixing the boundaries of the village commons, etc. The Council in the Ministry, a purely administrative body, supervised the application of the act.

The State Land Fund had to be accumulated mainly from the following sources: all public land belonging to the state and as yet not set aside for direct government initiatives in agriculture; all land withdrawn from the public forests; parts of the village commons; land bought by the fund; plots not used or not improved in due time by their owners (see below). Only persons whose primary occupation was agriculture, but who had no land at all or possessed less land than the average farm in the locality, had the right to obtain land under the act. Five hectares were set as a maximum of allocation. The allocation of land was bound to the condition of the owner's exploiting the land himself over a period of 20 years.

From 1927 to 1947, according to official data, 417,000 hectares were distributed to 230,000 families. The State Land Fund showed especially great activity during the war period. From 1940 to 1945, 297,000 hectares were distributed to 124,000 families (2, p. 119). These figures reflect the war conditions: distribution of land in Macedonia and colonization of refugees in the old state territory (Southern Dobruja not included).

The Labor Farms Act of 1941 was accompanied by the Land Improvement and Enlargement Act which was designated to "organize the full utilization of land that is not used or not sufficiently used." Three main ideas underlay the latter act: farmers who possessed unused land had to use it or they would be deprived of it; farmers who were ready to improve land would receive land from the State

Land Fund and obtain the ownership if they fulfilled their obligations; a special monetary fund was to be established to finance the improvement and enlargement of the cultivated area. As the principal sources of receipts for the monetary fund the act provided special allocations from the budget of the Ministry of Agriculture, 2 percent of the value of land distributed by the State Land Fund, 50 percent of the value of communal land taken over by the State Land Fund, etc. The machinery of the application of the act was similar to that of the Labor Farms Act. Local "economic committees" had to investigate local conditions and work out plans for all places; the aggregate of local plans formed the State Plan for improvement and enlargement of the cropland. The budget of the fund for 1941 amounted to 409 million leva, afforded for the most part by allocations from the Ministry of Agriculture (182 million leva) and by loans from the State Agricultural and Co-operative Bank (117 million leva), and spent chiefly for drainage (53 million leva) and irrigation works (112 million leva).

Another solution of the problem of farm splitting was attempted by co-operative cultivation of land. The members of a joint cultivation co-operative ("labor co-operative farm") used their land, manpower, implements, machinery, and draft animals for production on common account. Ownership of all means of production remained as it was, untouched by collective production. Though started before the war, the co-operative cultivation of land was strongly supported by the government after 1945. Up to 1948 the results were rather unsatisfactory. In 1947 the co-operative farms numbered 543 with 43,827 members (2, pp. 119–21), out of a total of 1,094,904 farms and a farm population of 5,196,432 at the end of 1946; the total area exploited by co-operative farms represented no more than 4 percent of all land in farms (184,000 hectares out of 4,894,289). The main reason why the idea of co-operative cultivation of land was not widely accepted was the difficulty of finding a method for the just distribution of the produce betweeen the co-operators. Especially strong was the antagonism between the members supplying relatively more labor and those supplying relatively more land to the collective (see 6, p. 63).

In 1948 the so-called "collectivization drive" started; that is, compulsory measures to join the labor co-operative farms were applied. Since then the collective farms have grown both in number and in total area, but they have lost their free character. (On the development of collective farming, see the General Survey, p. 57.)

CHANGES WITHIN THE CROPLAND

During the war the cropland area as a whole first showed a sudden rise in 1941 and then a gradual decrease, which continued after the war (see Table 11 and Appendix Table XI, p. 453).[3] The jump in 1941 was due to Bulgaria's incorporation of Southern Dobruja.

TABLE 11.—UTILIZATION OF LAND, FOUR-YEAR AVERAGES, BEGINNING 1935/36 AND 1940/41*

Category of land	Percent		Thousand hectares		
	1935/36 to 1938/39	1940/41 to 1943/44	1935/36 to 1938/39	1940/41 to 1943/44	Absolute change
Area sown	33.0	33.7	3,399	3,733	+334
Fallow land	4.6	4.6	472	512	+ 40
Arable land	37.6	38.3	3,871	4,245	+374
Permanent meadows	2.9	2.6	296	293	− 3
Multiennial cultures	1.6	1.9	167	214	+ 47
Cropland	42.1	42.8	4,334	4,752	+418
Uncultivated area, including forests and pastures	57.9	57.2	5,981	6,332	+351
State area	100.0	100.0	10,315	11,084	+769

* Data from Bulgaria, Direction générale de la statistique: *Annuaire statistique du Royaume de Bulgarie, 1941* (1941); *Revue de la statistique générale de la Bulgarie et Bulletin mensuel*, 1945, No. 1; and *Bulletin mensuel*, 1946, No. 1, and 1947, No. 11.

The opinion of Dentcheff, chief of the Agricultural Section in the Central Statistical Office, on the decrease of cropland after 1941—

[3] The data on area in this study are taken from official statistical sources, as cited in the tables.

The figures refer to first crops planted alone. The areas of crops grown with others, as well as of second crops (grown and harvested after the first) are not shown. So there are no duplications of areas in space or in time.

The groups of crops have the following composition:

Food cereals: wheat, rye, meslin, rice
Feed cereals: corn, barley, oats, spelt, millet
Oil-bearing crops: sunflower, sesame, groundnuts, rapeseed, soybeans, castor beans
Fiber plants: cotton, flax (including flaxseed), hemp (including hempseed)
Beans: dry beans, lentils, broad beans, peas, chick-peas
Melons: watermelons, muskmelons, pumpkins
Vegetables: cabbage, onions, peppers, tomatoes, etc.
Fodder crops (hay sown): alfalfa, vetch, cockshead, clover, corn grown as green fodder, fodder millet
Multiennial cultures (tree and bush crops): vineyards, strawberries, fruit trees, roses, mulberry trees
"Other crops": sorghum, mint, etc.

The yearly averages are computed leaving out the years 1939/40 and 1944/45 in

as indicated by the statistical data—is that the enumerations in 1942–44 are biased as a result of the tendency of farmers to declare fewer hectares than they actually had sown (7, p. 10). But the continuity of the decline suggests that the causes lay deeper. In times of price control and forced delivery the area sown really does contract. This was Bulgaria's experience during World War I.

The second characteristic of the development of cropland during the war is the stability of the ratio of area sown to the total cropland. It was 78.5 percent in 1941–44 and 78.4 percent in 1936–39 (see Appendix Table XII, p. 454).

Within the cropland the notable changes are the decrease of the proportion under food cereals (from 37.4 to 33.0 percent) and the increase in that of feed cereals (from 24.2 to 25.6 percent), potatoes (from 2.1 to 3.7 percent), fodder crops (from 5.4 to 6.2 percent), and multiennial cultures (from 3.9 to 4.5 percent).

Another group of crops shows a more or less temporary increase in area during the first half of the war period (1940–42) but not enough to influence the percentage distribution of the cropland by crops. These crops are rice, tobacco, sugar beets, soybeans, dry beans, hemp, pepper, and strawberries. The majority of these are labor-intensive cultures. Obviously the tendency toward intensification observed in the prewar period continued for some time during the war with, however, diminishing force.

FACTORS DETERMINING CHANGES WITHIN THE CROPLAND AREA

The Land Cultivation Plan.—According to the Civil Mobilization Act of April 23, 1940, which put all rights of disposal of the means of production into the hands of the Council of Ministers for the duration of the war emergency, the Civil Mobilization Board, in collaboration with the Ministry of Agriculture and with the approval of the Council of Ministers, had to work out a general Land Cultivation Plan for the distribution of the total cultivated area by crops and by districts every year. The district agencies of the Ministry of Agriculture were obliged to distribute the district quotas among the communities. The mayors had to issue "cultivation orders" to the farmers within the community quotas.

The policy adopted directed the agricultural production in gen-

order to get clear limits of the periods. As food cereals are predominantly winter crops, while the remaining crops are almost all summer crops, each of the excluded agricultural years touches two periods of analysis.

eral toward more food cereals, oil-bearing crops, sugar beets, tobacco, fiber plants, and potatoes, at the expense of orchards, permanent meadows, fallow land, and uncultivated area. It aimed at a greater food supply. Other considerations—foreign-trade obligations and fiscal needs—were decisive only in the case of tobacco.

The scheme given below shows to what extent the Land Cultivation Plan succeeded in reaching its objectives. Note the direction of area changes: 1941–44 as compared with 1936–39 (averages).

Land use	According to the plan	Actual	
		Absolute	Percentage share in total cropland
Food cereals	+	−	−
Sugar beets	+	+	+
Oil-bearing crops ..	+	+	−
Fiber plants.....	+	0	−
Potatoes	+	+	+
Tobacco	+	+	+
Multiennial cultures	−	+	+
Permanent meadows	−	0	−
Fallow land.....	−	+	0

Though the interdependence of prices and supply of agricultural products is very complicated, and in spite of the fact that the country is extremely heterogeneous as regards disutility of labor, so that it is very difficult to make general statements about the response of farmers to changes in prices of agricultural products, the discrepancy between plan and reality may be ascribed mainly to the development of prices (see Appendix Table XIII, p. 455).

Prices of wheat, sunflower seed, cotton, flax, and hemp in 1940–42, inclusive, were relatively low. They were kept down for the sake of the cost-of-living policy of the government. There was a striking contrast between the development of producers' prices of wheat, sunflower seed, and hemp on the one side, and producers' prices of fruit on the other, as seen in the following index numbers (1939 = 100):

Crop	1940	1941	1942
Wheat	125	178	177
Sunflower seed	138	133	200
Hemp (fiber)	80	116	84
*General price level....	*135*	*171*	*215*
Grapes	242	272	353
Plums	200	316	326

Thus the plan failed to increase the area of cultures with relatively low prices and to reduce the area of cultures with relatively high prices.

There were cases in which the culture expanded even though the increase of producers' prices was slight. Examples of this were sugar beets and potatoes. But special reasons were responsible for these exceptions. Sugar beets offered special advantages to producers: they were delivered to the sugar factories for sugar and feed stuff (beet residues) in addition to the price. Furthermore, they were produced in the frame of regional contingents and on the basis of contracts with the sugar factories. The area under sugar beets expanded especially in new regions, now opened for sugar-beet cultivation (southern Bulgaria). As regards potatoes their production in regions of poor soil was stimulated by special government measures.

Summing up, we might say that the Cultivation Plan succeeded as long as it did not cross the interest of the farmers. Penalties for violation of the Civil Mobilization Act, under which the Cultivation Plan was worked out, were very severe. Yet the plan was not enforced because a great part of the farmers had been drafted into the army.

Other government measures.—Also contributing to the expansion of orchards was the Fruit-Growing Act of March 18, 1941. This act provided for a Fruit-Growing Plan which differed from the Land Cultivation Plan in two important respects: it was noncompulsory and was constructed by synthesis. Village committees were asked to give information about the present state of orchards, about land appropriate for future orchards, and about the planting material necessary for a period of four years. The aggregate of local plans represented the general pomi-culture plan for the country. State and privileged private nursery gardens had the task of supplying young trees at low prices. New orchards were exempted from direct taxation for a period of 10 years.

Another act—the New Vineyards Act of March 21, 1941—contained regulations about planting new vineyards and filling up gaps in existing ones. The act forbade the planting of any species of grapes other than the "Bolgar" and the other kinds of table grapes demanded by the foreign markets.

Since only farmers who had no vineyards or less than 3 hectares were allowed to plant these kinds of grapes, the act aimed at the extension of grape area in a new direction. Farmers with more than 3 hectares of vineyards were only allowed to plant the favored species for renewal, grafting, or filling up of the existing plantations.

These two acts—the Fruit-Growing Act and the New Vineyards Act—were typical of the ideal of Bulgaria's agricultural policy of prewar times. Being in possession of all natural conditions necessary for fruit production it was hoped that Bulgaria would develop into the "California of Europe." This explains the great interest in irrigation and in the winning of foreign markets for fruit and vegetables—the two remaining conditions for the solution of the problem.

Along the same lines of policy lay the decision of the Council of Ministers of May 5, 1943, which forbade the uprooting of the oil-bearing rose. The area under roses went down from 7,000 hectares in 1930–34 to 3,000 hectares in 1943. That is why the government made an effort to preserve the production basis of attar of roses, in which product Bulgaria had for centuries held a leading position in the world (in 1947 the area under roses decreased further to 2,000 hectares).

Producers' prices of agricultural products.—The general causes of the movement of prices will be discussed below (chapter 5). Here the price data upon which the index of the Central Statistical Office for producers' prices of agricultural products is constructed will be discussed (see Table 12 and Appendix Table XIII).[4] The data relate to official prices.

TABLE 12.—AGRICULTURAL PRODUCTS: PRODUCERS' PRICE INDEX AND SCISSORS OF PRODUCERS' AND WHOLESALE PRICES, 1939 TO 1946*

Year	Producers' price index			Wholesale price index	Ratio of changes in producers' and wholesale prices
	Crop products	Animal products	All 58 commodities		
	(1)	(2)	(3)	(4)	(3 ÷ 4)
1939.....	100	100	100	100	100
1940.....	135	109	128	111	115
1941.....	171	141	163	143	113
1942.....	215	193	209	187	111
1943.....	269	314	282	240	118
1944.....	500	477	493	359	138
1945.....	618	587	609	541	113
1946.....	644	703	661	627	105

* Data from Bulgaria, Haute chambre d'économie nationale, *Narodno Stopanstvo*, 1947, No. 3, pp. 27–28; and Direction générale de la statistique, *Bulletin mensuel*, 1947, No. 2-3.

There is a peculiarity in the data on prices of field crops (crop production excluding fruits and vegetables). Trading in the major-

[4] The index is computed according to the aggregate formula, with average quantities sold by farmers in the period of 1935–44 as weighting factors (*8*, pp. 22–29).

ity of field crops was a state monopoly. The figures show the average price obtained by dividing the total value of purchases, effected by the Cereal Export Directorate, by the total quantity purchased. Hence they also reflect changes in the composition of deliveries, pertaining to the quality of the products.

During the first half of the war period official producers' prices of all agricultural products increased from year to year at about the same rate: 28 percent in 1940, 27 percent in 1941, and 22 percent in 1942. In 1943 the rate became faster, 34 percent, and then rose to 72 percent in 1944. In 1945 there was again a smaller increase—24 percent.

Relative to 1939, producers' prices of animal products lagged behind those of vegetal products through 1942 (though they increased at a more rapid rate after 1940), but went above them in 1943 and 1946.

We come to an important conclusion when we compare producers' prices and wholesale prices of agricultural products (see Table 12). Up to the end of 1944, producers' prices increased more rapidly than wholesale prices, owing to the government policy of decreasing the trade margins by state monopolies.

Through 1942, official producers' prices were actually the prices at which farmers sold their products. Later on, with the deterioration of the economic and political situation they lost more or less of their significance, but this was due not so much to the fact that they were no longer applied as to the diminishing of the share of obligatory deliveries in total sales.

Table 13, containing data collected by the Institute for Research in Agriculture for 1944, gives an idea of black-market prices.

CHANGES IN REAL INCOME OF FARM POPULATION FROM FARMING DURING THE WAR

The methods of measuring changes in the real income of the farm population have been explained in chapter 1. Only two methodological remarks need be added: Tables 6 (p. 378) and 14, relating to physical volume of agricultural net output before and during the war, are not comparable, being based on two different computations of the net value of agricultural production; Table 15 and Appendix Table XIV (p. 456) are continuations of Table 7 (p. 378) and Appendix Table IX (p. 452) respectively.

There is a great contrast between the prewar and wartime development of the real income of the farm population, as far as this can be inferred from the changes in physical volume of total agricultural net

TABLE 13.—BLACK-MARKET PRODUCERS' PRICES FOR CROPS IN 1944*
(*Leva per kg.*)

Commodity	Official price	Black-market price
Wheat	13.8	25
Rye	11.7	36
Barley	9.8	22
Oats	11.9	30
Millet	12.0	30
Corn	10.0	22
Castor beans	18.0	30
Hemp fiber	100.0	210
Flax fiber	146.0	200
Dry beans	15.0	26
Potatoes	17.0	17
Cabbage	9.7	15
Onions	15.2	30
Vetch (grain)	13.2	21
Hay	7.3	10

* Data from P. Kiranoff, *Nazionalnia Dohod na Bulgaria* [*The National Income of Bulgaria*] (Sofia, 1946), p. 19.

output. The upward tendency of the prewar period was interrupted as early as the beginning of the war period (see Table 14).[5] The result was that the general level of real income in 1940–45 was lower than in 1935–39 and that in the second half of the war period it was lower than in the first. Falling physical yields per hectare were mainly responsible for this development (see Appendix Table XV, p. 457), changes in cultivated area being small (from an average of 4,773,000 hectares in 1941 and 1942 to 4,715,000 hectares in 1943 to 1945). Even if we make allowance for the high basis of comparison (1939) there is still evidence of a deterioration of the situation after 1941.

It should be pointed out that the decline of the real income per

[5] The data on the net value of agricultural productions are taken from *9*, p. 63. Farm population is computed on the basis of the official figures for total population for December 1940 (6,676,000) and December 1946 (7,022,206), considering natural increase and assuming that the farm population constituted 73 percent of the total population in 1939. Thus we obtain (for the middle of the year):

	1939	1940	1941	1942	1943	1944	1945	1946
Total population	6.29	6.32	6.73	6.79	6.85	6.91	6.92	6.98
Farm population	4.59	4.61	4.98	5.02	5.07	5.11	5.12	5.17
Nonfarm population	1.70	1.71	1.75	1.77	1.78	1.80	1.80	1.81

Extraordinary changes caused in 1940 by reincorporation of Southern Dobruja; in 1944–45 by German-Bulgarian war and coup d'état.

TABLE 14.—PHYSICAL VOLUME OF AGRICULTURAL NET OUTPUT, 1939–46*

Year	Net value of crop and animal production at constant prices (1939)		
	Total (*million leva*)	Per head of farm population (*leva*)	(*index numbers*)
1939.....	23,096	5,032	100
1940.....	20,463	4,439	89
1941.....	22,648	4,547	91
1942.....	21,325	4,248	85
1943.....	19,574	3,861	77
1944.....	18,466	3,614	72
1945.....	15,066	2,943	59
1946.....	17,621	3,408	61

* Data from Bulgaria, Direction générale de la statistique, *Bulletin mensuel*, 1947, No. 2-3, p. 63; on population see note 5, p. 392.

head of the farm population was not accompanied by a decrease in the purchasing power of cash receipts from marketings received *from a unit of product* (1 kilogram of tobacco, etc.). As the rises in the prices of farm products and domestic industrial products were kept balanced (see Table 16), farmers were able to get as much of domestic industrial products in exchange for their products as in 1939. But as their production was smaller than before the war, *they were*

TABLE 15.—GROSS REAL INCOME OF TOBACCO FARMS, 1939–46: PURCHASING POWER OF GROSS INCOME PER HECTARE*

Year	Yield of tobacco per ha. (*kg.*)	Producers' price of tobacco (*leva*)	Value of tobacco yield per ha. (*leva*)	Value of tobacco yield per ha. (*index numbers*)	Expenditures at constant quantities (*index numbers*)	Gross real income (*index numbers*)	Yield of tobacco per ha. (*index numbers*)
	(1)	(2)	(3)	(4)	(5)	(6)= (4÷5)	(7)
1939	956	43	4,111	100	100	100	100
1940	835	43.4	3,624	88	115	77	87
1941	748	55.2	4,129	101	145	70	78
1942	864	96	8,294	202	181	112	90
1943	701	107	7,501	183	232	79	73
1944	729	208	15,163	370	375	99	76
1945	499	260	12,974	316	569	56	52
1946	554	260	14,404	351	652	54	58

* Data from Bulgaria, Direction général de la statistique, *Bulletin mensuel*, 1947, No. 2-3; and Haute chambre d'économie national, *Narodno Stopanstvo*, 1947, No. 3, p. 25. Data for 1939 from Table 7, p. 378.

TABLE 16.—PRICE SCISSORS FOR AGRICULTURAL AND INDUSTRIAL PRODUCTS, 1939–46*

Year	Wholesale price indexes			Ratio of changes in agricultural and industrial prices
	All 72 commodities	Domestic agricultural products	Domestic industrial products	
	(1)	(2)	(3)	(2÷3)
1939.....	100	100	100	100
1940.....	116	111	116	96
1941.....	148	143	149	96
1942.....	188	187	186	100
1943.....	237	240	242	99
1944.....	345	359	355	101
1945.....	550	541	575	94
1946.....	627	629	629	100

* Data from Bulgaria, Direction générale de la statistique, *Bulletin mensuel*, 1947, No. 2-3.

on the whole able to exchange only a smaller amount of farm products.[6]

However, the statement on the stability of the purchasing power of cash receipts from marketings requires some qualifications. It holds good only with respect to domestic industrial products which were mainly consumers' goods. Capital goods for use in agriculture (agricultural implements and machines) were mostly imported commodities. After 1941 the commodity composition of imports changes in favor of state supplies. Official prices of agricultural capital goods were still kept low, but such goods became very scarce and increasingly difficult to buy.

CITATIONS

1 Bulgaria, Direction générale de la statistique, *Annuaire statistique du Royaume de Bulgarie, 1940* (1940).

2 "Postwar Problems of Bulgarian Agriculture" (supplied by Bulgarian authorities), *Food and Agriculture, The FAO European Bulletin* (Food and Agricultural Organization of the United Nations, Washington), October-November 1947.

3 Bulgaria, Direction générale de la statistique, *Annuaire statistique du Royaume de Bulgarie, 1941* (1941).

[6] For big wheat farms (with high marketing ratio) the real income from the marketing part of production was higher in the second half of the war period than in the first (see Appendix Table XIV). But big farms (10 hectares and over), to which we refer here, constituted only 7 percent of all farms and covered no more than 23 percent of all farmland (according to 1946 Census of Agriculture).

4 S. Sagoroff, "Die Grundbesitzverhältnisse," in J. S. Molloff, *Die Sozialökonomische Struktur der Bulgarischen Landwirtschaft* (International Conference of Agricultural Economists, Berlin, 1936).

5 R. Belovski, "The Splitting Up of Consolidated Land in Bulgaria," *Narodno Stopanstvo* (Bulgaria, Haute chambre d'économie nationale), 1947, No. 4.

6 D. Barzatchky, "Co-operative Cultivation of Land," *Narodno Stopanstvo*, 1947, No. 4.

7 Bulgaria, Direction générale de la statistique, *Revue de la statistique générale de la Bulgarie et Bulletin mensuel*, 1945, No. 1.

8 P. Shapcaroff in *Narodno Stopanstvo*, 1947, No. 3.

9 Bulgaria, Direction générale de la statistique, *Bulletin mensuel*, 1947, No. 2-3.

CHAPTER 3

SUPPLY AND CONSUMPTION OF FOOD AND FEED

QUANTITATIVE CHANGES IN CROP PRODUCTION: YIELD PER HECTARE, TOTAL QUANTITY HARVESTED

In general, yields per hectare were lower during the war than in 1937–39 (see Appendix Table XV). There was only one major crop—dry beans—whose yield stood at a higher level throughout the war period. During the second half of the war period (1943–45) yields fell more than during the first half (1940–42). The only important exception was wheat, but even in its case the average yield for the whole war period was below the level of 1937–39.

The extent of the decrease of yields can be seen from Table 17, which covers a period of 40 years. It relates to cereals only, but to some degree it may be considered as representative of all crops. It

TABLE 17.—YIELDS OF CEREALS PER HECTARE, FIVE-YEAR AVERAGES, 1906–45*

Period	Wheat	Rye	Meslin	Rice	Corn	Barley	Oats	Spelt	Millet
				(*Quintals*)					
1906–10	9.3	8.3	9.7	14.0	10.1	9.6	7.4	7.2	7.1
1911–15	10.1	9.6	10.7	13.4	12.1	10.6	7.7	7.5	10.3
1916–20	8.3	7.6	8.6	11.5	8.1	8.8	6.2	6.2	7.5
1921–25	8.8	8.3	8.2	14.1	9.1	9.3	7.0	7.2	8.5
1926–30	10.7	10.1	10.9	13.9	10.1	12.5	7.8	9.2	9.7
1931–35	11.1	10.2	12.0	13.0	12.5	12.5	8.3	9.8	9.5
1936–40	13.3	10.5	12.7	16.9	12.0	14.8	9.2	10.6	8.4
1941–45	9.2	7.3	8.0	13.7	7.5	8.7	6.8	5.5	4.0
				(*Index numbers: base 1936–40*)					
1906–10	70	79	76	83	85	65	80	68	85
1911–15	76	91	84	79	101	72	84	71	122
1916–20	62	72	67	68	68	59	68	59	89
1921–25	67	79	73	84	76	62	77	69	100
1926–30	80	96	86	82	84	85	85	87	115
1931–35	84	97	94	83	104	84	91	92	114
1936–40	100	100	100	100	100	100	100	100	100
1941–45	69	69	63	81	63	59	74	52	48

* Data from A. Ousunoff, "Increase of Grain Production in Bulgaria," *Narodno Stopanstvo* (Bulgaria, Haute chambre d'économie nationale), 1947, No. 9-10, p. 41.

is surprising to observe that the average yields per hectare of rye, meslin, barley, spelt, and millet were lower during the war than in any other five-year period since 1906. Wheat and rice yields were the lowest since 1926. Clearly the decline after 1939, and especially after 1942, was great.

Natural conditions were mainly responsible for the development during the war. In spite of the permanent military mobilization, manpower was not so scarce as to affect agricultural production. The Bulgarian army was not involved in military operations before the winter of 1944/45. The country itself was not a theater of war.

Since areas were generally not expanding—the total area sown decreased between 1941 and 1945 from 3,766 to 3,490 thousand hectares—total production also declined (see Table 18 and Appendix

TABLE 18.—CROP PRODUCTION BY GROUPS OF CROPS, THREE-YEAR AVERAGES, 1937–45*

(*Thousand quintals*)

Crops or groups of crops	1937–39	1940–42	1943–45
Food cereals	22,975	13,147	15,496
Feed cereals	12,597	11,077	7,865
Tobacco	341	417	311
Sugar beets	1,891	2,777	2,678
Oil-bearing crops	1,733	1,696	738
Fiber plants	125	108	51
Beans	934	1,779	1,710
Potatoes	1,120	1,605	1,485
Vegetables	2,787	2,714	...
Fodder (hay)	11,832	11,124	7,500
Grapes	5,751	4,088	6,730

* See Appendix Table XVI, p. 458.

Table XVI, p. 458). The increase of the areas under rice, tobacco, sugar beets, soybeans, dry beans, hemp, potatoes, pepper, and strawberries, and the yield increase of soybeans, dry beans, hemp, potatoes, and strawberries, in the first half of the war period, gave for these crops an average yearly harvest that was higher than in 1937–39. But these increases did not change the situation on the whole: the index of the physical volume of agricultural net output continued to fall steadily with a short interruption in 1941 (see Table 14, p. 393).

Under the influence of decreasing yields, agricultural production

was generally lower in the second half of the war period than in the first. Among major crops only the production of sugar beets and dry beans persisted at a high level up to 1944. What is more important, the production of wheat even rose (from 11,044 to 13,570 thousand quintals), though it remained well below the level of 19,242 thousand quintals in 1937–39. Grapes showed the best record: their production rose above the prewar level. Among the crops with declining production, oil-bearing crops were leading; their production fell by 56 percent as compared with the first half of the war period.

In the yearly development of production, 1945 was an outstandingly bad year. Under the impact of a severe drought all crops showed a great fall. Wheat suffered the least of the major crops. The corresponding bad year in the first half of the war period, though not so disastrous, was 1942. For the other years no such clear characteristic can be given. From the point of view of food supply, 1944 was a good year, because cereal production was then very satisfactory. But with respect to income formation, 1941 was a better year, for then production was relatively high for a large number of major crops.

QUANTITATIVE CHANGES IN LIVESTOCK AND ANIMAL PRODUCTION

Official data on livestock in Bulgaria are collected in the frame of the General Census. Our analysis is based on census figures for 1934 and 1946. The Central Statistical Office and the Ministry of Agriculture have also collected yearly data on livestock for the periods 1939–42 and 1943–44 respectively. But these data have not been published by the Central Statistical Office because they are not reliable. Nevertheless they did appear in some publications—for example, the *International Yearbook of Agricultural Statistics, 1941–42 to 1945–46* (Rome, 1947).

The gap between the growth of the population and the development of animal husbandry in Bulgaria is a problem which was realized when the results of the 1934 census became known. The number of domestic animals did not keep up either with the size of the population or with the number of farms. Comparison of the census figures for 1934 and 1946 (see Table 19) suggests that only those kinds of animals increased which were used as draft animals: cattle and horses. The total increase of cattle, buffaloes, horses, and mules on farms amounted to 114,000 head, which is even less than the increase of the number of farms (154,000). The number of domestic animals

TABLE 19.—CHANGES IN LIVESTOCK, 1926 TO 1946*

(*Domestic animals on December 31: thousand head*)

Kind	On farms, in industrial establishments, and households					On farms only			
				Change, 1934–46		Number		Percent	
	1926	1934	1946	Absolute	Percent	1934	1946	1934	1946
Cattle	1,817	1,498	1,693	+ 195	+15	1,838	1,931	98	97
Buffaloes	448	375	312	— 63	—17				
Horses	482	532	548	+ 16	+ 3	519	540	91	93
Mules	27	37	36	— 1	— 3				
Asses	185	181	171	— 8	— 5	164	153	91	90
Sheep	8,740	8,839	8,784	— 55	— 0.6	8,614	8,416	97	96
Goats	1,261	913	1,005	+ 92	+10	885	896	97	90
Swine	1,002	902	870	— 32	— 4	859	783	95	90
Poultry	10,118	12,773	11,412	—1,361	—11	11,758	10,041	92	88

* Data from Bulgaria, Direction générale de la statistique, *Annuaire statistique du Royaume de Bulgarie, 1941* (1941), and *Bulletin mensuel*, 1947, No. 11. Frontiers as at the date of census (in 1946 including Southern Dobruja).

kept for food production went down: poultry by 11 percent, swine by 4 percent, and sheep by 0.6 percent. Goats, with an increase of 10 percent, were an exception.[1]

The change in the proportion of cows to oxen is a very important development: the cow began to replace the ox as a draft animal. In twelve years the number of oxen and cows kept only for reproduction and milk decreased by 113,000 while the number of cows kept for reproduction, milk, and work increased by 282,000 (see Table 20).

TABLE 20.—NUMBER OF OXEN AND COWS, 1934 AND 1946*

(Number on December 31: thousand head)

Kind	1934	1946
Oxen:		
Over 2 years old:		
Kept for work	601	529
Kept for fattening	8	7
Total	609	536
Cows:		
Over 2 years old:		
Kept for reproduction and milk	176	135
Kept for reproduction, milk, and work	282	564
Kept for fattening	3	8
Total	461	707

* Data from Bulgaria, Direction générale de la statistique, *Bulletin mensuel*, 1947, No. 11.

Another interesting phenomenon is the growing number of domestic animals that were kept for food production outside of farms. Thus the number of goats kept in nonagricultural households increased absolutely and relatively more than the number of goats on farms; and the number of pigs and poultry in industrial establishments and nonagricultural households also increased, whereas on farms they decreased. This reflects the effort of many nonagricultural households to become self-supporting in milk, eggs, and fats. Considering the number of goats, pigs (including young pigs), and poultry outside of farms (for 1946: 109,000, 87,000, and 1,371,000 respectively), we might say that during the war one-third (about 100,000) of the nonagricultural households kept small domestic animals for food production (see Table 19).

[1] Greater changes, which do not correspond to the census figures, are shown in *1*, p. 121.

Unfortunately there are no reliable figures on the total meat production. Slaughtering yards were operating in all cities but only 10 percent of the villages had such equipment. Judging from the activity of slaughtering yards in the cities, meat production for the urban population decreased during the war period by more than 50 percent. The decreasing tendency was arrested temporarily in 1945, when there was a sudden rise due to the great drought in that year. Both series of figures, those for slaughtering in the cities and those for villages, reflect the farmers' desires in 1945 to reduce the number of domestic animals they had to feed (see Appendix Table XVII, p. 460).

It should be noted that in spite of the growing number of village slaughtering yards the number of officially controlled slaughterings in the villages decreased. No doubt this shows that farmers tried to avoid government control of meat production.

In a special study on meat production in Bulgaria during the decade 1937–46, G. Markhoff estimates the yearly average of all meat produced at 180,000 tons, and that of all meat consumed at 174,000 tons (*2*). He also gives yearly figures which cannot be accepted for the reasons stated above. His estimate of the yearly averages should be regarded as too high. The average yearly quantity of meat produced in the city slaughtering yards at the beginning of the war period amounted to some 40,000 tons (42,000 for 1942). Since the urban population constituted about one-fourth of the total population (25 percent in 1946), the corresponding figure for all slaughterings in the country would be 160,000 tons. However, as meat consumption per head of the population in the cities at that time was higher than in the villages, even 160,000 tons would be a rather high figure for the total yearly production of meat during the war period.

Milk production in Bulgaria is estimated at about 500 million liters as the yearly average during the war period. This is again Markhoff's estimate (*3*). Only 10–12 percent or about 50–60 million liters of all milk produced passed through the dairy establishments, on whose reports dairy-products statistics are based.

Figures on the activity of dairies also show the downward tendency characteristic of the war period. From 1939 to 1943 dairy-cheese production fell from 16.8 to 10.6 million tons, production of dairy butter from 700,000 to 400,000 tons. The fact that such quantities of dairy products were produced, as Appendix Table XVIII shows, by an increasing number of domestic animals available

for milking makes it obvious that not all milk was delivered to the dairies. Hence the figures quoted above exaggerate to some extent the decline of the dairy-product output of all dairies and farms taken together. Nevertheless they represent accurately the quantity of dairy products available for official rationing among the urban population and the army supplies.

EXPORT OF FOOD

Data on food exports are best appraised when they are compared with the data on agricultural production; they enable us to ascertain the amount of food available for consumption. Nevertheless it is worth while to analyze export figures first independently of consumption in order to get a general picture of the development. As food imports do not appear in Bulgaria's food balance we shall have to comment on export data only.

In classifying the objects of Bulgaria's food exports we have little freedom. We must proceed in accordance with statistical publications and try to make the best of the data published in the officially adopted frame of classification. That is why our tables contain figures for selected commodities and figures relating to the rest of the respective groups of commodities ("other fruits, etc.," "other cereals, etc.," and "other animal products, etc."). Any kind of food which played an important role in the exports of any year of the period 1937–45—i.e., the value of whose exports exceeded a certain percentage of the total value of exports—is listed separately in the classification.

The development of food exports was fairly uniform (see Table 21). In the first half of the war period (1940–42) almost all important export commodities—tobacco, fruit, pulps, soybeans, corn, dry beans, eggs—showed an increase in the quantity exported. The decrease in grape exports was due to the transformation of grapes into pulp. Among vegetal products, only exports of wheat and sunflower seed really decreased.

In the second half of the war period exports of all kinds of food fell. For most commodities, exports dropped below the figures of the pre-war period (1937–39). Only tobacco, pulps, and dry beans kept a high level throughout the war period. Pulps and soybeans show rather an exceptional development in exports. The quantity of pulps exported rose from 11,000 tons in 1937–39 to 60,300 tons in the first half, declining to 45,700 tons in the second half of the war period. At the same time soybean exports first climbed from 9,200

TABLE 21.—EXPORTS OF FOOD BY KIND, 1937–45*

(Thousand tons; animals, thousand head)

Important export commodities	1937	1938	1939	1940	1941	1942	1943	1944	1945	Three-year averages 1937–39	1940–42	1943–45
Tobacco	22.1	3.6	34.8	23.6	41.7	41.9	48.3	25.5	24.0	30.2	35.7	32.6
Grapes	36.6	57.2	50.9	35.4	17.7	29.3	9.9	—	0.8	48.0	27.5	3.6
Pulps	3.1	10.0	19.8	32.6	67.2	81.1	82.2	9.3	45.5	11.0	60.3	45.7
Sunflower seed	42.5	9.7	22.6	12.3	—	2.0	—	—	—	24.7	4.8	—
Soybeans	10.0	4.3	13.3	29.1	46.7	17.8	6.5	1.4	—	9.2	31.2	2.6
Other fruits, vegetables, seeds, fodder (excluding cereals) ...	37.2	56.6	77.1	37.5	29.5	29.3	15.5	1.4	7.2	57.0	32.1	8.0
Wheat	193.5	109.8	175.1	168.4	2.7	0.1	35.0	—	—	159.3	57.0	11.7
Corn	98.7	58.6	1.5	138.6	16.0	16.4	17.3	—	5.0	52.9	57.0	7.4
Dry beans ...	21.9	4.2	—	0.9	14.5	40.5	25.1	4.3	20.0	8.7	18.6	16.5
Other cereals and beans; cereal and bean products ...	68.5	18.8	8.6	39.9	13.9	10.4	7.1	—	7.7	32.0	21.4	4.9
Eggs	17.5	15.2	14.8	19.6	21.6	13.9	5.0	1.2	0.3	15.8	18.4	2.2
Other animal products (food)	8.4	8.9	4.0	4.1	3.8	2.6	0.4	—	—	7.1	3.5	0.1
Pigs	24.4	43.0	23.3	27.4	8.8	—	—	—	—	30.2	12.1	0.0
Cattle	9.7	6.1	3.1	—	—	—	—	—	—	6.3	—	—

* Data from Bulgaria, Direction générale de la statistique, *Annuaire statistique du Royaume de Bulgarie, 1941* (1941); *Revue de la statistique générale de la Bulgarie et Bulletin mensuel*, 1945, No. 1; *Bulletin mensuel*, 1946, No. 1; and Internat. Inst. Agr., *International Yearbook of Agricultural Statistics, 1941–42 to 1945–46*, II (Rome, 1947).

to 31,200 tons and then almost disappeared. The intensive exportation of pulps and soybeans was connected with the production campaign for these farm products organized by the German buyers.[2]

Pulps were the war form of fruit exports, preferred for technical reasons—to overcome the growing transportation difficulties in Central Europe during the war.

In this connection some data on Germany's share in Bulgaria's export of food should be given. Appendix Tables XIX, XX, and XXI (pp. 461–62) throw some light upon developments in that direction. The share of Germany in the total value of all exports increased year by year and reached 88 percent in 1944. Her share in the exports of tobacco and the two most important groups of commodities from the viewpoint of production and trade—namely fruits, vegetables, seeds, fodder (excluding cereals), and cereals, beans, and products of cereals and beans—showed an upward tendency. In fruits, vegetables, etc., Germany's share reached 94 percent in 1943. One might say that in 1943 and 1944 Germany absorbed practically all Bulgarian food exports. It should, however, be pointed out that after 1941 the physical volume of food exports declined. Hence Germany received relatively more and more of something which absolutely became less and less. Owing to the change in political conditions in 1945, Germany's share in Bulgarian exports fell to almost zero (.5 percent).

NORMAL HUMAN CONSUMPTION

As "normal human consumption" we may consider actual human consumption (quantities entering the households) during the prewar period. The information we have on normal human consumption in this sense comes from two sources: (*a*) for the rural population, from the investigation made by the Institute for Research in Agriculture at the Ministry of Agriculture for the year 1938/39 and published by Christina Motcheva;[3] and (*b*) for the urban population, from the

[2] The growing of soybeans was introduced into Bulgaria by the German Soya Joint Stock Company, a branch enterprise of I. G. Farbenindustrie. The production of soybeans was based on an intergovernmental agreement. According to this agreement the Soya Company was granted for a limited period of time (1 to 4 years) the right to grow special kinds of soybeans on a certain area (70,000 hectares in 1941) and to dispose of the production, after delivering to Bulgarian agricultural authorities a quantity of soybeans corresponding to a part of the area contracted (20,000 hectares). No other firm was allowed to organize the production of soybeans during the same period. Nevertheless, agricultural co-operatives succeeded in developing, though on a smaller scale, a parallel system of soybean production.

[3] The investigation relates to 314 rural households living in 161 villages. The average size of the corresponding farms was 6 hectares, the average size of households 5.67 members (*4*, pp. 15–20).

Household Budget Survey of the Central Statistical Office for the year 1938/39.[4]

In computing the daily energy supply for a "man in agriculture, 25 years old" Motcheva arrived at 3,785 calories. The Central Statistical Office obtained for clerk and worker households 2,867 calories per consumption unit daily. Strictly speaking, these two figures are not comparable for three reasons.

First, they relate to different consumption units. The urban population that was observed was converted into consumption units with the help of Engel's schedule of human demand for calories according to age, in which the demand of an adult of 25 years and over is assumed to be equal to 1. The unit of rural population is directly given (if we used the conversion method here we would not obtain the figure 3,785).

Second, the coefficients for calorie content of the single kinds of food applied are not the same.[5]

Third, the households observed by the Central Statistical Office represent the mode of urban population, while the households reporting to the Institute for Research in Agriculture belong to a social class lying above the mode of rural population.

Nevertheless the two figures—3,785 and 2,867—may be considered as giving the approximate ratio between normal food consumption in the two sections of national economy. The Central Statistical Office published another figure for daily food consumption per consumption unit in rural households: "net content" calories, 4,770. It is much higher than Motcheva's figure although the basis is the same—namely the data of the Institute for Research in Agriculture (see 5, p. 29). This is an erroneous result due to disregarding the weights—the varying number of households reporting.

The most characteristic feature of nutrition in Bulgaria is the fact

[4] The survey embraced 227 clerk households and 175 worker households in five large cities, with a monthly income of 3,000 leva (5, pp. 3–7).

[5] Motcheva applied coefficients used by the Central Statistical Office of the Soviet Union, according to 6. The Central Statistical Office of Bulgaria used the following coefficients (calories in 100 grams of product): white bread, 258; bread, ration type, 217; flour, 341; rice, 293; vermicelli, 343; butter and sunflower oil, 879; lard, 867; meat, 101; meat products, 148; fish, 70; poultry, 92; cheese, cashcaval, 400; cheese, ordinary, 377; milk, 91; eggs, 140; olives, 424; dry beans, 259; potatoes, 85; grapes, 53; honey, 315; wine, 37; liquor, 123; sugar, 389.

In both cases the calorie conversion coefficients were based on "net" content of energy in foods: they did not relate to the gross energy of food intake. But it is not clear what concept of net content was used, that is to say, it is not clear which categories of energy losses occurring in the kitchen "refuse" and in the human body (losses in digestion and metabolism) have been taken into consideration on this subject.

that both rural and urban households derive the calories they need preponderantly from carbohydrates. Vegetal food forms a large part of the consumption schedule: 79 percent in the villages, 66 and 71 percent respectively in the cities (see Tables 22 and 23). This fact reflects the deficiency of Bulgaria's animal husbandry in peacetime, as already pointed out (see p. 398), and the relatively low real income of the population.

The low standard of living of the urban population in Bulgaria may be seen in Table 23, which gives very detailed information on the quantities of food consumed by a clerk or worker household of average size (3 to 4 members) before the war.

FOOD AVAILABLE FOR HUMAN CONSUMPTION DURING THE WAR

Christina Motcheva and Svetoslav Dimitroff have estimated the amount of food available for human consumption in a broad sense during the period 1939–43 at 2,557 calories per head of the population, or 3,681 calories per consumption unit, "net" content of food intake, daily (7, pp. 14–15). The whole population has been converted into consumption units according to Engel's schedule of human demand for calories by age (the method adopted by the Central Statistical Office). Total food production is expressed as 6,791 billion calories (yearly average). The figure was adjusted for exports and then alternatively divided by the total number of the population and of the consumption units. The authors compare the amount available for consumption per consumption unit—3,681 calories—

TABLE 22.—NORMAL FOOD CONSUMPTION OF MAN IN AGRICULTURE IN NUTRIENTS*

(*Grams per day*)

Nutrient	Amount
Proteins:	
Vegetal origin	71
Animal origin	25
Total	96
Carbohydrates	628
Fats	57
Calcium	0.80
Phosphorus	1.94
Ferrum (milligrams)	20.71

* Data from Bulgaria, Haute chambre d'économie nationale, *Narodno Stopanstvo*, 1947, No. 3, pp. 19–20.

TABLE 23.—NORMAL FOOD CONSUMPTION OF URBAN POPULATION PER HEAD AND PER CONSUMPTION UNIT; "NET" ENERGY CONTENT OF FOOD CONSUMED BY CLERK AND WORKER HOUSEHOLDS IN THE YEAR 1938/39*

Food category	Daily consumption per consumption unit (*calories*)		Daily consumption per head (*calories*)		Relative share (*percent*)	
	Clerks	Workers	Clerks	Workers	Clerks	Workers
Cereals and beans; products of cereals and beans	1,738	1,882	1,270	1,374	60.3	66.0
Meat, poultry, fish	125	108	86	75	4.3	3.8
Fats and oils	363	351	265	257	12.6	12.3
Milk, dairy products, eggs	313	231	229	169	10.9	8.1
Vegetables	84	79	62	58	2.9	2.8
Fruits	90	70	66	51	3.1	2.4
Overseas products	145	109	106	79	5.1	3.8
Beverages	23	23	17	17	0.8	0.8
Total	2,881	2,853	2,101	2,080	100.0	100.0

* Data from Bulgaria, *Revue de la statistique générale de la Bulgarie*, 1946, No. 3-4, pp. 15–20. On the energy concept see above, p. 405, note 5.

with the figure obtained by the Institute for Research in Agriculture for normal (prewar actual) consumption of a man in agriculture—3,785 calories. But this procedure is not correct. The war figure of 3,681 calories should not be compared with 3,785 but with *3,601 calories*, i.e., with the *average* of 2,867, the normal consumption of the urban population, and 3,785, the normal consumption of the rural population, weighted according to the proportion of both groups in the total population (1:4). The war figure thus appears to be larger than the "normal," the prewar figure. Obviously this is an unrealistic result, which can be explained by the fact that the figure 3,681 does not relate to the period we are interested in. As compared with the true war period (1940–45), the period of 1939–43, for which Motcheva and Dimitroff's estimate is valid, includes a year of plenty (1939) and does not embrace the worst harvest year (1945).

We come nearer to the truth if we take as our basis the estimate of the Central Statistical Office for yearly average total food production minus exports and seed during the period 1940–44, amounting to 5,795 billion calories. This gives 2,262 calories available for human consumption in a broad sense, daily, per head. "Normal" food consumption at the household stage for both the urban and rural

population was, as stated above, 3,601 calories per consumption unit, or 2,625 per head,[6] approximately. The relation of 2,625 calories normal consumption to 2,262 calories available for human consumption during the war indicates a decrease of at least 10 percent in the domestic food supply at the production stage, i.e., with allowance for commercial exports. In judging this figure two things should be considered: it is an average for the rural and urban population and does not take into account the situation in 1945.

Official figures on vegetal food (food cereals, sugar beets, oilseeds, beans, potatoes, and grapes) available for consumption per head of the total population during the period 1939–45 suggest a greater discrepancy between the normal (prewar) and the war supply of food (see Appendix Table XXIII, p. 464). The percentages of decrease range from 21 (1944) to 54 (1945). A precise interpretation of this table is impossible because feed cereals are used partly as human food and partly as fodder for domestic animals, the proportion varying from year to year. No doubt the basis of the comparison is too high, as the harvest in 1939 was the best, or at least one of the best, in the history of Bulgarian agriculture (see Table 6, p. 378).

The existing figures on the domestic food supply at the production stage, i.e., on the amount of food available for consumption in a broad sense, during the war are subject to errors of estimation in both directions. As statistics on agricultural production, especially on animal husbandry, give the lowest limit of the estimation of "receipts," the food supply appears to be underrated. On the other hand, "outgoes" are estimated somewhat lower than they really were, since statistics on exports do not include the direct food deliveries to the German military authorities in Bulgaria. The error in the estimation of the outgoes is insignificant as compared with total food consumption.[7]

[6] The figure 2,625, for food consumption per head of population, is based on the ratio of figure per head to figure per consumption unit used by the Central Statistical Office; the corresponding figure resulting from the ratio used by Motcheva and Dimitroff would be 2,501.

[7] The main items of German "military exports" from Bulgaria, as contrasted with "commercial exports," were meat, fats, vegetables, lumber, cement, and coal for the needs of the German army in Greece. In Bulgaria there were only small German military units in the Black Sea ports, Varna and Bourgas. According to an intergovernmental agreement the purchases for German military units had to be carried out by the so-called Central Organization for Special Deliveries, a Bulgarian semiprivate association supervised by the Civil Mobilization Board in order to control German military exports. The Record Office of the Board must have data on this subject.

Kiamileff gives the following rough estimates of German "invisible exports"

More important is another objection to the inference drawn from the food-balance figures for the war period. They do not show the real food situation in the cities. So far, the "amount of food available for consumption in a broad sense," or, what is identical, the domestic food supply at the production stage for the total population, has been considered. Going over to the "market supply of food," that is to say, to the amount of food available for consumption in the cities only, we find that *for the population living on food rations, food consumption during the war was considerably, certainly more than 10 percent, below the normal level.* (The "population living on food rations" comprises the urban population and the rural population in the tobacco regions, but to simplify the exposition we shall speak only of the "food consumption of the urban population.")

Unfortunately, there is no official codification of the regulations concerning food rationing so that we cannot strictly prove this statement. Reliable data are at hand only for bread rations, and they tend to show the contrary. But bread, above all, was the product with which the authorities were mainly concerned: rations were relatively high and actually issued; the more the general food situation deteriorated the more the government's attention concentrated upon the supply of bread. Bread rationing was introduced in October 1941. It started with 400 grams daily for adults but was very soon reduced to 300 grams. This lowest ration lasted for two years. In July 1943 the bread ration was raised to 540 grams and remained so to the end of the war. This was possible, thanks to the good wheat harvests in 1943 and 1944 (see Appendix Table XVI, p. 458). The ration of 540 grams can be regarded as the normal bread consumption of an adult in Bulgaria. It was only 14 percent lower than the bread consumption of a man in agriculture (see Table 22, "carbohydrates") before the war.

We must again use figures on the amount of food available for consumption to indicate the changes in actual food consumption. This time, however, the data refer only to the urban population. Meat and dairy products are the best examples; the results for meat are shown in Table 24.

(consumption by German units in Bulgaria, military exports, and soldiers' purchases), in million leva (8, p. 55):

1941	1,010	1943	897
1942	750	1944	1,142

There are no indications of how great a part of these sums was spent on food deliveries.

TABLE 24.—MEAT AVAILABLE FOR CONSUMPTION IN THE CITIES, 1935–45*

Year	Urban population (December)	Meat production, city abattoirs (*million kg.*)	Meat consumption per head of urban population (*kg.*)
1935.....	1,303,000[a]	45.4	35.0
1941.....	1,481,000[b]	49.0	33.0
1945.....	1,730,000	33.4	19.0

* Data from Bulgaria, Direction générale de la statistique, *Annuaire statistique du Royaume de Bulgarie, 1942* (1942), pp. 20–21, 593; *Bulletin mensuel*, 1947, No. 1, p. 20, and No. 2-3, p. 95.

[a] Population on December 31, 1934.

[b] Estimate: 22 percent of 6,734,454.

It is possible to prove the change in the cheese supply in the same way. The production of the dairies—the output of cheese outside of the farms—was under government control and was able, in the beginning, to cover the rations. In 1939 the dairy output of cheese amounted to 16,800 tons. It decreased every year thereafter, falling to 5,500 tons in 1945 (see Appendix Table XVIII, p. 460). The actual meat and cheese consumption of the urban population was, however, still lower because a part of the quantities available for consumption was taken away for the needs of the army.

Following the yearly analysis of the food situation we find contrasting developments. On the whole we may say that the supply of animal and vegetal foods other than cereal products and grapes was larger in the first half of the war period, whereas the supply of cereal products and grapes was larger in the second half, especially in the years 1943 and 1944. The disastrous food situation in 1945 can be seen from Table 25, which gives the yearly rations actually distributed in four large cities—Sofia, Plovdiv, Varna, and Pleven. The total daily ration per head amounted to 1,109 calories.

Exports did not affect the food balance very much. This is proved for vegetal food by Table 26. In the first half of the war period exports of cereals and beans (not oil-bearing) constituted 6 percent of the production. In the second half they almost vanished. (On the influence of wheat exports on the bread supply, see pp. 439–40.)

FODDER BALANCE

An attempt to compute a full fodder balance of Bulgaria for the war period was made by Dr. Nikola Condoff in 1947 (*9*, pp. 116–35). The starting point is the conversion of all domestic animals into

TABLE 25.—YEARLY RATIONS PER CAPITA IN FOUR LARGE CITIES IN 1945*

Commodity	Kilograms	Calories
Bread	153	332,661
Flour	1.5	5,115
Sugar	3.9	15,085
Rice	1.3	3,292
Sunflower oil	2.7	24,129
Lard	0.8	7,026
Vermicelli	0.3	984
Cheese, ordinary	0.3	1,101
Cheese, cashcaval	0.3	1,152
Meat	8.1	8,225
Meat products	2.8	4,073
Fish	2.3	1,607
Yearly total		404,850
Daily total		1,109

* Data from Bulgaria, Direction générale de la statistique, *Revue de la statistique générale de la Bulgarie, 1946*, No. 3-4, p. 20.

"fodder cows." Condoff made this conversion on the basis of the relations in the average weight of the different kinds of slaughtered animals, using the data of the Central Statistical Office for the activity of the slaughtering yards during the decade 1936–45.

After adjusting for the difference between "live weight" and "dead weight" he applies his coefficients to the number of domestic animals for each year of the decade and obtains the yearly total number of "fodder cows," which varies between 3 and 4 million head. The use of current statistical data on livestock which we have criti-

TABLE 26.—ANNUAL EXPORT RATIOS OF VEGETAL FOODS AND TOBACCO. THREE-YEAR AVERAGES, 1937–45*

(Thousand tons; percent)

Commodity	Production			Exports[a]			Exports as percent of production		
	1937–39	1940–42	1943–45	1937–39	1940–42	1943–45	1937–39	1940–42	1943–45
Cereals and beans (not oil-bearing)	3,649	2,601	2,508	253	154	41	7	6	2
Grapes	575	409	673	59	88	49	10	22	7
Tobacco	34	42	31	30	36	33	88	86	106

* Data from Tables 17 and 21.
[a] Including cereal products and pulps.

cized (see p. 398) is not fatal in this case: the result represents the low limit of estimation. Condoff then computes the "total quantity of fodder necessary for maintenance of life" (total number of fodder cows multplied by 912.5, i.e., by annual ration of a cow of 250 kilograms for basal metabolism, expressed in fodder units),[8] the "total quantity of fodder necessary for the maintenance of milk production" (total number of milk-giving animals multiplied by normal milk output per animal in liters, divided by 3, the average milk output per fodder unit), and the "total quantity of fodder necessary for work" (average number of workdays per hectare multiplied by cultivated area in hectares and by 1.5 fodder units per workday).[9] All fodder necessary for all purposes, i.e., normal animal consumption of the country, amounted to 3.5 to 4.2 million fodder units yearly (see Table 27). The debit side of the food balance having thus been es-

TABLE 27.—FODDER NECESSARY FOR NORMAL ANNUAL CONSUMPTION, THREE-YEAR AVERAGES, 1937–45*

(*Million fodder units*)

Period	Fodder necessary for			Total
	Maintenance of life	Milk production	Work	
1937–39.....	3,329	458	214	4,001
1940–42.....	3,518	491	225	4,234
1943–45.....	2,872	436	227	3,535

* Data from Nikola Condoff, "The Fodder Problem in Bulgaria," *Narodno Stopanstvo* (Haute chambre d'économie nationale), 1947, No. 9-10, pp. 116–35.

tablished, it is necessary to ascertain the total quantity of fodder available for consumption, expressed in fodder units (see Table 28). The coefficients of conversion into fodder units are not published.

Both total quantities of fodder thus computed—fodder necessary for normal consumption and fodder available for consumption—are given in Table 29 as average yearly figures for the periods 1937–39, 1940–42, and 1943–45. The balance shows a surplus of 8 percent for the period 1937–39 and a deficit of 5 percent for the war period 1940–45.

What does this result mean? It leads us to conclude that there was an adjustment between needs and supplies as well as between the total herd of domestic animals and the total quantity of fodder avail-

[8] Accepting Kellner's ideas, Condoff assumes that the basal metabolism requirements of a fodder cow amount to 1 fodder unit for 100 kg. live weight, daily.

[9] Or three fodder units per workday of a pair of draft animals ("span workday").

TABLE 28.—FODDER AVAILABLE FOR CONSUMPTION, THREE-YEAR AVERAGES, 1937–45*

Period	Bulky fodder (roughage)[a]					Concentrated fodder			All fodder
	Succulent[a] (green)		Dry			Feed cereals	Other kinds	Total	
	Grazing	Other kinds	Hay and leaves	Straw	Total				
	(Million fodder units)								
1937–39.....	1,218	139	402	1,230	2,989	1,018	322	1,340	4,329
1940–42.....	1,337	139	435	1,002	2,912	830	239	1,069	3,981
1943–45.....	1,142	133	313	911	2,499	584	308	892	3,391
	(Percent)								
1937–39.....	28	3	9	29	69	24	7	31	100
1940–42.....	34	3	11	25	73	21	6	27	100
1943–45.....	34	4	9	27	74	17	9	26	100

* Data from Nikola Condoff, "The Fodder Problem in Bulgaria," *Narodno Stopanstvo* (Haute chambre d'économie nationale), 1947, No. 9-10, pp. 116–35.

[a] Including roots and tubers.

able for consumption. The longer the period considered, the greater must be the adjustment between both sides of the fodder balance. It is almost complete for the period 1937–45.

Condoff gives yearly figures for surpluses and deficits as follows (in million fodder units):

1936.....	− 12	1941.....	+ 85
1937.....	+ 44	1942.....	− 996
1938.....	+ 23	1943.....	+ 486
1939.....	+920	1944.....	+ 387
1940.....	+115	1945.....	+1,306

Although these figures are less accurate than the averages in Table 29—as the errors caused by disregarding the changes in fodder stocks are larger the shorter the time for which the balance holds—they suggest a new inference. We see that the deficits of both

TABLE 29.—FODDER BALANCES, THREE-YEAR AVERAGES, 1937–45*

Period	Necessary fodder (*million fodder units*)	Available fodder (*million fodder units*)	Surplus or deficit in fodder	
			Million fodder units	Percent
1937–39.....	4,001	4,329	+328	+8
1940–42.....	4,234	3,981	−253	−6
1943–45.....	3,535	3,391	−144	−4
1940–45.....	3,885	3,686	−199	−5

* Data from Nikola Condoff, "The Fodder Problem in Bulgaria," *Narodno Stopanstvo* (Haute chambre d'économie nationale), 1947, No. 9-10, pp. 116–35.

war subperiods were brought about by two sudden crises in the fodder supply—the bad harvests of 1942 and 1945. However, only in 1945 did the scarcity of fodder lead to emergency slaughterings.[10]

The well-balanced result of Condoff's computation shows that an adjustment was reached, but he does not tell us at what level this took place. Since we know from the Livestock Census (see Table 19, p. 399) that in the time which elapsed between the last two censuses (1934 and 1946) there was only a small increase in cattle herds, lagging behind the growth of the number of farms, and since the crisis in the fodder supply broke out in 1942 and 1945, we may conclude that during the war the live weight of farm animals (by average kind and age) must have decreased.

Condoff's investigation has one great merit. It reveals why Bulgaria's livestock, taken as a whole, did not make essential progress. As can be seen from Table 28 (lower part), feed cereals represent only 17 to 21 percent of the diet for domestic animals in Bulgaria; in the best years, like the period 1937–39, they reach 24 percent. On the other hand, grazing and straw together make up about 60 percent (69 percent in 1945) of animal consumption and thus constitute *the basis of feeding in Bulgaria.* This is far from enough to allow a considerable growth in the number or in the live weight of domestic animals. According to the estimate published by an anonymous author in the journal *Semledelsko Scotovadstvo* (*10*), the quantity of fodder necessary for normal consumption, when computed on the basis of Western European norms, amounts to 8 million fodder units. The deficit in the fodder balance would then be 3 million fodder units or 38 percent.

GOVERNMENT MEASURES CONCERNING AGRICULTURAL PRODUCTION[11]

Government measures aiming at the increase of agricultural production can be divided into two groups from the economic point of view: *indirect* measures, undertaken by the Ministry of Agriculture by means of legislation with the intention of improving the conditions of development for agriculture, and *direct* measures, proposed

[10] The total quantity of meat produced in city slaughtering yards was (in million kg.):

1944	20.1
1945	33.4
1946	17.3

[11] Not related to area and distribution of cropland.

by the Civil Mobilization Directorate to reorganize agricultural production itself. The first group embraces a large number of acts most of which were not fully carried out. The list of the most important agricultural acts shows the most urgent needs of Bulgaria's agriculture. In chronological order there should be mentioned:[12]

Land Irrigation and Drainage Act of April 21, 1940
Animal Husbandry Improvement Act of June 14, 1941
Soil Forces Maintenance Act of July 14, 1941
Seed Production Act of November 21, 1941
Hail Insurance Act of February 14, 1942
Agricultural Machines and Implements Act of April 3, 1943
Seed Material Act of April 10, 1943
Ministry of Agriculture Organization Act of April 10, 1943

Two of the above acts found especially warm support on the part of the farm population, and their application made much progress during the war. These were the Land Irrigation and Drainage Act and the Hail Insurance Act. Curiously enough, both were concerned with natural conditions of agriculture.

The Land Irrigation and Drainage Act was connected with the Water Syndicates Act, which dealt with farmers' co-operatives founded for the purpose of collective water supply. The new act provided financial facilities for the irrigation and drainage enterprises carried out by the state or by water syndicates.

The Hail Insurance Act introduced an obligatory insurance of crops up to 50 percent (cereals 60 percent) of gross cash income per hectare. Areas under 0.1 hectare were free from the obligation of taking part in the insurance. The kinds of cultures subject to the obligatory hail insurance had to be determined by the Council of Ministers.

The direct government measures concerning agricultural production dealt exclusively with animal husbandry. Intended to increase the number and weight of domestic animals, the Council of Ministers issued the following regulations under the authority of the Civil Mobilization Act:

a) Poultry Breeding (May 16, 1942). Farmers were obliged to keep poultry in the following proportions to their farm area:

1 to 3 hectares—total number, 20
3 to 15 hectares—10 per hectare
15 hectares and over—total number, 200

[12] Date of entering into force, i.e., of publication in the *Official Gazette.*

Farms with a specialized (noncereal) production were free from the obligation of breeding poultry.

b) Fattening of Cattle and Sheep for Slaughtering (July 1942). A special Central Organization for Meat Supply to the Army and the Population was established in which the Central Organization for Special Deliveries (a semiprivate association supervised by the Civil Mobilization Directorate), the Association of the Merchants Dealing with Animal Fattening, the Union of Agricultural Co-operative Societies, and the Association of Exporters of Domestic Animals participated. The trade organization, the means of production, and the employees of all these associations were mobilized in the sense of the Civil Mobilization Act. The new organization had priority in buying lean animals and in using the high mountain pastures belonging to the state and the communities.

c) Direction of Swine Breeding with Regard to Pork and Lard Production (July 1942). A committee of the Ministry of Agriculture with representatives of the Civil Mobilization Directorate and the Cereal Export Directorate and the State Agricultural and Cooperative Bank determined the number of sows and boars to be kept for reproduction in each rural community every year. The communities were obliged to register all sows and boars kept for reproduction. If the actual number of sows and boars kept for reproduction lay under the plan figure, obligatory breeding in this place had to be introduced. The fodder for the maintenance of registered sows and boars was exempt from delivery to the Cereal Export Directorate. In cases where the available fodder proved to be insufficient the directorate had to provide the quantities lacking. The government guaranteed the sale of the pigs at fixed prices: the Central Organization of Meat Supply was instructed to buy the surplus.

d) Obligatory Raising of Swine (May 1943). Mills, dairies, factories disposing of food residues, and big farms were obliged to keep swine for fattening. This measure had to be carried on by the Civil Mobilization Directorate, the Cereal Export Directorate, and the Ministry of Agriculture.

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CHAPTER 4

GOVERNMENT CONTROL OF PRODUCTION AND TRADE

PRICE CONTROL

Price-control forms.—In Bulgaria, price control took place in the form of the following kinds of *controlled* or *official* prices:

a) *maximum prices* or *price ceilings*;
b) *minimum prices*, when sales at lower than official prices were forbidden; and
c) *fixed prices*, when deviations from official prices in both directions were not allowed.

Maximum prices were introduced either by determining the *absolute price* (the official price was explicitly announced and such prices were called "absolute maximum prices"), or by determining the *price change* (an absolute or a percentage increase of the official price in relation to the price at a given basic period was authorized, and such prices were called "base-bound maximum prices").

A second classification of maximum prices was given according to validity in space: *locally controlled* and *nationwide controlled* prices.

A third classification of maximum prices resulted from the distinction between *general prices* and *delivery prices*, the criterion being the quantity to which the price regulation had to be applied—i.e., whether the absolute price or the price change was valid only for the *transaction with a given quantity or for any transaction* involving the commodity in question.

The various price-control forms developed as follows:

Base-bound maximum prices.—Immediately after the outbreak of the war in Western Europe on September 7, 1939, a *general price freeze* was announced. Prices of commodities under the price freeze were "base-bound prices." They were regulated, as already pointed out, by the announcement of a relative (percent) or absolute change of the basic price. The absolute price had to be computed and made public by the seller (base-bound prices predominated during 1940

and 1941 in textiles). Very soon, in the course of the next four months, agricultural products and all domestic manufactured foods were exempted from the price freeze, i.e., they ceased to be "base-bound maximum prices." Producers' and wholesale prices of such commodities were left free for export transactions and at the same time brought under special official control in internal transactions either by the announcement of absolute maximum prices for producers and merchants or by the gradual development of state trade. Prices of imported food—e.g., tea, coffee, white pepper, and lemons—were controlled by absolute maximum prices issued for single deliveries. Prices of restaurant meals were "base bound"—they were regulated by price freeze (for the first time in March 1941, base January 1, 1941). A freeze for the few remaining free prices came in April 1942 (base 1941), but it concerned actually only a few unimportant kinds of food, like peppermint.

Absolute maximum prices.—The regulation of prices by means of authorizing changes from a basic period had the important advantage of causing the least disturbance in the existing price system. But this method had also one great disadvantage. It made price control very difficult for the authorities as well as for the buyers, whereas absolute maximum prices gave a clear picture of the price situation—of the price level and of the price system as well.

It is essential to distinguish between the two categories of absolute maximum prices according to validity in space, mentioned above, i.e., between locally controlled and nationwide controlled prices. At the beginning of the war the official attitude was in favor of local price regulation as a means of relieving the Ministry of Commerce, Industry, and Labor, which had to carry on the organization of war economy. But when the local authorities obviously began to compete in setting relatively high prices with the intention of keeping local products for local consumption, the price policy was changed. As time elapsed, less freedom was left to local authorities to determine prices. Centrally guided price regulation went through different stages of organization which followed more or less in chronological order but in some cases overlapped. The first stage was to ask local price agencies (called "commissariats") to submit their orders (typically for vegetables) in advance or subsequently to the Ministry (Internal Trade Directorate, Price Control Office) for approval. The second stage was to fix an upper limit for local retail prices, allowing a price difference in favor of the supply to the big cities (this applied essentially to meat and eggs). The third

stage represented the issuing of equal producers' prices for all places with railroad stations, or situated on the Danube or the Black Sea, and to authorize for the other places transportation costs from the next railroad station or port (this was necessary for industrial products, especially for sugar, beer, sunflower-seed oil, canned vegetables, and refined lard). The fourth stage consisted in announcing absolute maximum producers' prices equal for all places and in fixing price margins for wholesale and retail trade (particularly in fish, hay, fruit, and, in the second half of 1942, for vegetables). The fifth stage—the stage of the highest centralization—was to divide the country into price zones and to determine equal retail prices for all places in each zone (for instance for poultry in 1941, and meat in 1943) or even in the whole country (as in the case of bread and cheese).

Delivery prices.—The changes in stocks of raw materials in the food industry, due to new harvests, and in stocks of finished or semi-finished products in import trade, due to new deliveries, necessitated the solution of a difficult problem. The price-control authorities were faced by the dilemma: whether to allow new prices for all stocks of home-manufactured or imported food, disregarding old and new deliveries, and by doing so to assist in raising prices, or, on the contrary, to insist that the selling price should correspond to the prices of the deliveries and by so doing to destroy the homogeneousness of the market (transactions with one and the same kind of commodity being made at different prices).

In the first case we have to deal with "general prices," and in the second with "delivery prices." For domestic industrial production (vegetable oils, canned vegetables, etc.) and for the import of important food commodities (sugar and salt), the decision fell in favor of the general prices. For imports of oversea spices and drugs, as well as for Mediterranean fruits, delivery prices were preferred. General prices, in the form of absolute maximum prices or of base-bound maximum prices, predominated in food supply, as imports of spices, drugs, and fruits were not significant.

Minimum prices.—The development in exports, characterized by decreasing international competition, centralized buying on the part of Germany, and increasing frontier prices, created the problem of *minimum producers' prices.* The agricultural products concerned were, in the first place, tobacco, strawberries, tomatoes, and pigs. This group embraced just those products which were not subject to state monopolies but to private trade.

Although purchases of tobacco for export to Germany were carried on by Bulgarian firms, they were effected at standard terms determined by the semiofficial Central Buying Organization of the German tobacco industry. In order to defend the interests of the Bulgarian producers and to guarantee the fulfillment of the trade agreements that were concluded with Germany every year, the Bulgarian government issued regulations which established quantity quotas and minimum producers' prices for every tobacco harvest by production regions and even small production districts. As the quality of tobacco varies from farm to farm, the minimum prices were determined as average prices for all sales in one district. Very effective penalties assured the realization of producers' prices, all transactions being supervised by the local agents of the State Agricultural and Co-operative Bank.

Producers' prices of strawberries and tomatoes were endangered not so much by the organization of exporters as by the way these products mature for delivery, coming, as they do, as an influx of fruits which must be delivered in a very short time or lose in value. The announcement of minimum prices prevented selling at prices unfavorable for the producers: the pressure of the harvest could not be used to decrease prices.

During 1940 and 1941, as long as exports of pigs and bacon continued, producers of pigs faced a more or less organized demand, so that minimum producers' prices were necessary also in that section of agricultural production.

There was enough evidence that during every production campaign the cheese-producing dairies tried to reduce the prices they paid to farmers who supplied the milk, and this led to the announcement of minimum producers' prices for milk (delivered to dairies) in nationwide regulations.

Fixed prices.—The term "fixed prices" is used here to designate those official prices which were obligatory for both sides—the seller as well as the buyer. Theoretically, at least, minimum prices allowed buyers to pay more and maximum prices allowed sellers to demand less than the official price required. Fixed prices gave no freedom in either direction.

The prices of state trade organizations like the Cereal Export Directorate or the State Agricultural and Co-operative Bank, fit into this definition in their business activities. But we are concerned here only with fixed prices in private trade transactions. Fixed prices in this sense came about the middle of 1942 and gradually replaced

price control by minimum prices. They became especially important in the trade in grapes.

Price equalization.—As the rise in prices of imported and domestic commodities increased, delivery prices as a form of price control proved more and more unpractical. Relief from price disparity due to great discrepancies in the costs of production was sought in general prices. The industrial enterprises and import firms were permitted to sell all the stocks they had at the newly authorized higher price, but they were obliged to pay the treasury an "equalization tax" on old stocks—i.e., on the quantities produced or acquired at lower costs. The greatest receipts on price equalization taxes came from the manufacture of imported materials (agricultural implements, nails) or of agricultural products (sunflower-seed oil, soap).

In the course of 1941 some developments in the export of agricultural products took place which proved to be the source of an important reform. The Board of Foreign Trade had discovered that exporters realized abnormally high gains when the yearly intergovernmental agreements between Bulgaria and Germany concerning export and import prices were signed *after* the sale of the agricultural products from farmers to exporters had been completed. This was necessarily the case in the exports of manufactured food—tomato pulp, fruit pulps, jams, canned and dried vegetables, etc. As frontier export prices had the steady tendency to rise, the abnormal gains in exports to Germany became a serious matter. The reaction was the introduction of "export taxes" which were imposed from case to case by agencies of the Ministry of Commerce, Industry, and Labor. As the export taxes were imposed on agricultural products, it was decided to depose the receipts on a special account in the State Agricultural and Co-operative Bank and not to let them be paid to the Treasury. It was intended to return this money to the farmers in one form or another. The idea of creating a Price Equalization Fund was thus born. It was realized by the Price Equalization Fund Act of April 7, 1941.

The Price Equalization Fund was used to cover losses from reducing prices on domestic industrial products and on imported commodities bought by the farmers (copper sulfate for vineyards, leather for shoes, etc.). As the fund increased, its scope was enlarged. An amendment to the Price Equalization Fund Act was voted (entering into force on July 16, 1942) which contained the provision that the fund could be used to lower prices in general and that temporary deficits should be covered by advances from the Treasury.

Thus the fund had two sources of receipts: the equalization taxes on imports and domestic industrial products, and the export taxes. It resulted, so to speak, from the upward equalization of prices —from selling old stocks at new higher prices—and was used for price stabilization—to sell new stocks at old, lower prices. After the amendment, the price stabilization function of the fund developed considerably. Some large-scale operations of that kind took place. One of the most important instances was the temporary stabilization of wool-product prices in 1942. The Cereal Export Directorate was instructed to sell its entire stock of wool from the output of 1942 to the textile industry at 1941 prices, and the factories were obliged to sell the products made of 1942 wool at 1941 prices. The difference in prices was charged to the Price Equalization Fund.

RATIONING

A measure which preceded rationing was the limitation of household food reserves in the cities. As early as the autumn of 1940, when it became obvious that the war was going to last long, a regulation was issued forbidding the urban households to store reserves of important kinds of food. The maximum quantities permitted were originally fixed very low per head of the population—equal approximately to the amount of weekly consumption. In the course of 1941 the norms for household reserves were increased twice, reaching the amount of monthly consumption. On December 18, 1941 they were as follows (kilograms per head):

In households which did not produce the respective food:

Flour	1
Animal fats	3
Sunflower-seed oil	1
Cheese:	
Ordinary type	1
Cashcaval	1
Dry beans	10
Rice	1

In all households:

Sugar	2
Factory soap	1

As time passed, the rationing system, except as it applied to bread, operated less and less satisfactorily owing to the fact that the quantity of food in the country that was at the disposal of the authori-

ties became less and less sufficient to cover the rations. At the same time the control of household reserves lost its vigor and significance. The actual relation between the rationing system and the household-reserves control was not what had originally been expected. It was not that hoarding spoiled the rationing system; rather, the deterioration of the rationing system led to the abandonment of the limitations on household reserves.

Not all kinds of food were subject to rationing. Only the most important and scarcest—bread, flour, rice, vermicelli, sugar, vegetable and animal fats, meat, coffee, and tea—were rationed. The others, including, as the principal ones, beans, vegetables, fruits, nuts, poultry, milk, wine, beer, and liquors, were sold at controlled prices but in unrestricted quantities.

Rationing took on different forms that were introduced successively. Generally it broadened step by step as the control apparatus developed and the hope of obtaining normal supplies vanished. The first stage was the announcement of maximum quantities open to purchase in a single transaction (applying to coffee and tea). This regulation, practically giving merchants the right to refuse sales, merely aimed at preventing the storage of scarce commodities in households. The second stage was the introduction of coupon cards (in the course of 1941 for bread, flour, sugar, fats) or the registration of sales in household books. The third stage was—in both cases (coupon cards and books)—to bind sellers and buyers together by determining the group of customers to be supplied by a certain shop (from April 23, 1942 this applied to sugar, rice, salt, cheese, butter, and vegetable oil). Changes in the list of customers had to be authorized by the local commissary of supplies. The government believed that, though the public was no longer at liberty to buy where it chose, this restriction was overcompensated by the government's gain in control when the list of customers was known.

Some details should be given as to the principal kinds of food. It must be stressed that in all cases the rationing system was confined only to the "nonproductive population," i.e., to all cities and to the villages in the tobacco region.

Bread.—The main phases of the rationing of bread were mentioned in chapter 3. The restriction of bread consumption started with regulations as to the quality of the flour. In April 1941 mills were instructed to mix corn and wheat flour in a proportion of 30 : 70 and to produce from 100 kilograms of wheat as many kilograms of flour as the figure of the hectoliter weight of wheat plus 7.

In July 1941 bread was made again from pure wheat flour, but the extraction rate rose to the sum of "hectoliter weight plus 9." This regime lasted only until October 10. As the wheat balance of the first three months after the harvest proved unsatisfactory, coupon cards for bread were introduced, the daily rations being (in grams) 200, 400, 600, and 800, respectively, for children under 7 years, adults, adult physical laborers, and miners. A mixture of corn (30 percent) was re-established and extended to flour that was milled for farmers. Children under 3 years of age received 200 grams of white bread.

During the next two months the bread situation deteriorated. On December 13, 1941 some of the rations were reduced, the new allotments being 150, 300, 600, and 750 grams respectively. Children of 5 years and over received the normal adult ration; minors were allowed 100 grams of potatoes in addition. The corn mixture increased to 35 percent, but the ration for children under 5 years of age was given in white bread.

The wheat harvest of 1942 was bad (see Appendix Table XVI, p. 458), and slight reductions in the rations—to 125, 300, 550, and 675 grams respectively—were announced in September (the first figure applies to children under 5 years of age; for children of 5 to 7 years the ration was 175 grams). The quality of the flour was improved to a mixture of only 15 percent corn. Bakery goods and vermicelli were purchasable to the extent of 50 grams on each ration.

The improvement came in July 1943 when the rations were increased to 200, 540, 750, and 1,000 grams respectively. In addition to each ration 50 grams of bakery goods or vermicelli were allowed.

In every ration period bread could be exchanged for flour of a corresponding quality in a constant relation.

Fats (*butter, lard, vegetable oils*).—In addition to bread, fats were among the kinds of food which were rationed early (1941) by coupon cards. The normal fat ration amounted to 250 grams per person per week (sick persons received 500 grams). The first rationing applied only to fresh butter, but in 1942 it included all kinds of edible fats, and customers' lists were introduced.

Cheese.—The quantity control of cheese (ordinary type and the so-called cashcaval, both made from sheep's milk) was first confined to wholesale trade: the stocks were blocked and then gradually liberated for retail trade. Later maximum quantities of purchases (per transaction) were fixed. Coupon cards for cheese were not introduced until the end of September 1941. The initial monthly rations

were 400 grams per person (800 grams for children 1 to 2 years old). In April 1942 customers' lists were added.

Meat.—The consumption of meat was regulated first by the general prohibition of "selling, cooking, and consuming" of beef and veal on certain days of the week. This regime began in 1939 with 2 "meatless" days a week, but in July 1941 the number of meatless days was reduced to one. In order to compensate for the loss in bread in the nutrition of the urban population, the restrictions in meat consumption were completely canceled on October 20, 1941. But very soon the difficulties in obtaining meat supplies led to new and more severe restrictions. The prohibition of "selling, cooking, and consuming" meat was re-established and extended to every kind of meat for 3 days of the week (April 1942). In May 1942 rationing was introduced in the form of a maximum quantity per person—200 grams daily (issued only on the days not affected by the prohibition). Registration in household books and customers' lists accompanied this measure.

Sugar, rice, coffee, and tea.—Sugar and rice were rationed by coupon cards (with customers' lists starting in April 1942), but in the course of time regular distribution of these commodities ceased. For coffee and tea only maximum quantities of purchases (per transaction) were fixed.

Restaurant meals.—The restriction on restaurant meals applied to the number of meat dishes. In March 1942 a standard menu, consisting of 3 dishes only, was introduced for all restaurants in all places, but only for one day of the week. This regulation was abolished in July 1943.

PRODUCTION AND TRADE ORDERS, OBLIGATORY AND FORCED DELIVERIES

The following short definitions might be helpful for the understanding of the further exposition.

Production order: obligation to produce and deliver;
Delivery order: obligation to buy and deliver;
Obligatory delivery: obligation to deliver disposable goods;
Forced delivery: requisition or seizure of disposable goods.

The legal basis of production orders, delivery orders, and obligatory deliveries was either the Supply, Security and Price Regulation Act or the Civil Mobilization Act (see p. 444); and of forced deliveries, the Requisition Act.

Production orders were usually addressed to industrial establishments and meant an obligation to produce goods with the establishment's own materials or with materials especially furnished for this purpose to this establishment. The commodities so produced had either to be put at the disposal of the authorities—the High Commissariat of Supply or the Army Supply Division—or delivered to some other production unit or to trade organizations for distribution. The butter dairies, the cheese dairies, and the lard refineries worked predominantly under the regime of production orders.

Delivery orders played a much more important role in the food supply than production orders (for the other sectors of supply just the opposite was true). They belonged necessarily to the system of "central supply," i.e. of big trade organizations built up on a local or nationwide professional basis, usually in such a way that a whole trade branch was ordered to buy the commodities from the producers and to deliver them to the army, to public institutions, or to retailers, or to distribute them directly to the population. Delivery orders were given especially for jams, lard, fish, and meat, mostly after 1941 (see below).

Obligatory deliveries were either continuous or *ad hoc*. Producers of milk were obliged to deliver their surpluses to dairies, and farmers and butchers to deliver lard and tallow whenever they slaughtered (see pp. 433–34). Obligatory deliveries were made *ad hoc* very often before the state monopoly of sunflower seed was established: in June 1940, for example, the sunflower-seed merchants had to deliver their stocks to the factories for vegetable oils; the factories got production orders to extract the oil for human consumption. Another instance was the action carried through by the local commissaries of supply and by the mayors in April 1942 owing to the bad fodder situation. Feed merchants were obliged to deliver their stocks of bulky fodder (hay from permanent meadows, straw, etc.) and concentrated dry fodder (feed cereals, oilcake, etc.) for distribution among the farmers who did not have an adequate supply of feed for their animals.

Forced deliveries were used increasingly after 1941. In August 1942 bulky dry fodder was collected for the needs of the army. One month later 300,000 tons of potatoes were requisitioned from merchants and farmers for the needs of the urban population and for new production (seed).

Forced deliveries appeared also in combination with state monopolies. This form of quantity control is discussed below.

DRIFT TO STATE MONOPOLIES: NEW FUNCTIONS OF THE CEREAL EXPORT DIRECTORATE

Two periods can be distinguished in the activity of the Cereal Export Directorate before 1946: first, from its establishment up to the outbreak of World War II (1931–39), and, second, the war itself (1940–45).

Prewar period.—The Cereal Export Directorate was established in November 1930 to raise producers' prices of wheat.[1] The fall of the price of wheat at the commodity exchange in Varna and Bourgas from 651 leva per 100 kilograms in 1929 to 144 leva in 1934 (see Appendix Table XXIV, p. 465) deprived wheat growers of the full benefit of the good harvests of 1930 and 1931 and reduced their real income in 1933 and 1934 to a very low level. Originally the task of the Cereal Export Directorate was to buy all surpluses of wheat and rye that the farmers wanted to sell at prices above the export price level. The losses which the Directorate had from the exports of wheat were partly covered in its internal trade—by the sales for domestic consumption, i.e., by the expenditures of the urban population for bread.

The Cereal Export Directorate had especially heavy losses up to 1935. In 1936 and 1937 world-market prices of wheat went up and the situation of the Directorate improved. In 1938 and 1939 the Directorate continued to export at good prices but mostly to clearing countries. During the first four years of its activity the Cereal Export Directorate bought 1,431 thousand tons of wheat and rye and paid the farmers about 2.5 billion leva in price subsidies, i.e., more than the farmers would have received at export prices (*1*).

War period.—With the rise of prices and of physical yields of cereals during the years 1936–39 the Cereal Export Directorate was actually no longer of such importance to Bulgarian agriculture nor to the national economy as a whole. The war brought about a new era for the Directorate. Its task changed and its functions gradually increased to such an extent that it supervised almost the whole trade in vegetal farm products. The state monopolies proved to be the most effective method of controlling prices and quantities of commodities. In view of this fact there was a strong tendency to monopolize commodities as soon as an important section of domestic supply —food or raw materials for nonfood industry—was in danger of being paralyzed by other measures of control.

[1] Its full name was Directorate for Buying and Exports of Cereals.

The new functions of the Cereal Export Directorate might be formulated as follows: *acting as the granary of the nation and as the most important promoter of price stabilization.* Though it might be argued that now the object of greater concern was not the situation of the farmers, but of the urban population, the policy of state monopolies on agricultural products was of benefit to all social classes, because the functioning of the food-supply system guaranteed the functioning of the national economy as a whole. Furthermore the Cereal Export Directorate bought and sold commodities for the same price in all places where there were railroad stations or ports and thus helped to equalize the prices of agricultural and domestic industrial products not only in time but also in space. When in 1940 and 1941 the policy of stable wages required stable prices the Directorate again paid to wheat growers more than it received from the consumers (see Appendix Table XXIV).

The war period of activity started in 1939 with five trade monopolies: for wheat, rye, cotton, hemp (fiber), and flax (fiber). In 1943 the following 23 different monopolies were in force:

Wheat, rye
Rice
Barley, oats
Corn
Vetch, millet
Seeds of sunflower, rape, poppy, and tobacco
Groundnuts
Soybeans
Castor beans
Vegetable oils
Oilcake
Olives
Dry beans, peas, chick-peas
Hemp and flax (fiber and seed)
Cotton (fiber and seed)
Poppy (opium)
Valonia
Wool
Sheep and lamb hides
Mustard
Grape stones, dill
Mulberry-tree twigs (without leaves)
Waste (residues)—metal, rubber, wool, cotton, and paper

The activity of the Cereal Export Directorate took different forms. Distinction should be made among

Export monopoly
Monopsony
Monopsony and pure monopoly
Monopsony and monopoly with obligatory deliveries
Monopsony and monopoly with forced deliveries
Obligatory and forced deliveries to the Directorate without monopsony or monopoly

Export monopoly, the exclusive right of selling for export, and *monopsony*, the exclusive right of buying, appeared at the beginning

of the war period, in 1939 and 1940. These forms of trade were usually the prologue to the combination of monopsony with full monopoly. For instance, sunflower, rape, and cotton seed were first subject to export monopoly (November 1939) and then to full monopoly; then corn (November 1939 and April 1941) and oilcake (November 1939 and November 1941). Under the regime of export monopoly the Directorate bought at official prices like any other merchant and sold abroad to foreign buyers at prices approved by the Council of Ministers or at the commodity exchange price.

Pure monopsony was a rare phenomenon. One instance is known; namely, the buying of sunflower seed from the farmers in February 1940. The farmers could sell if they wanted to and as much as they wanted to, but *only* to the Cereal Export Directorate, at prices fixed by the Council of Ministers.

The typical form of CED activity was the *combination of monopsony and monopoly without any compulsory elements.* That is what was commonly meant by "monopoly of the Cereal Export Directorate": the exclusive right to buy and sell a given commodity.

The Directorate bought not from the producers directly, but through the so-called "agents" (middlemen), the merchants of the respective trade branch and the credit co-operative societies, i.e., through the channels of trade existing before the introduction of monopsony or monopoly. *The social structure of the country* therefore remained unchanged by the development of state monopolies. The agents were credited for operation costs, commission, interest, and storage.

The Directorate sold in five different ways:

a) for payments made in advance to the Directorate;
b) through the mediation of the State Agricultural and Co-operative Bank;
c) by orders to agents and buyers;
d) for payments made in advance to the agents;
e) directly to the population.

The deliveries under *a*, *b*, and *e* were made from the warehouses of the Directorate, those in cases *c* and *d* from the warehouses of the agents.

The most important objects of CED activity were cereals, sunflower seed, fiber plants, and wool. As the demand for these products was much greater than the normal surpluses of the farmers, obligatory deliveries had to be introduced. This method was first applied—

as early as 1940—to collect wool. In 1941 followed food cereals (only wheat, rye, and meslin), with relatively high allowances for the producers: 900 grams per person daily (800 grams for hired labor).

In 1942 when the cereal harvest was bad and farmers were fully aware of the progressive inflation, new compulsory measures became necessary. The government had to requisition cereals in order to secure the bread supply for the urban population and the army. This was extended to corn, the disposable (nondelivery) proportion of which was not determined per person but per hectare. This method tended to affect the small farms less than direct rationing. The requisition norms per hectare were adjusted to the productivity of the districts.

Besides the regular functions which the Cereal Export Directorate had to fulfill, it was very often assigned other tasks by decision of the Council of Ministers. In these cases obligatory and forced deliveries were enforced without the establishment of permanent monopsony or monopoly rights for the Directorate. In 1941 the legal position and the organization of the CED were used in this way to transfer the sunflower seed from the merchants and the agricultural credit co-operatives to the factories extracting the oil; in 1942 to transfer preserved meat, and in 1943 to transfer cheese from the producers to the merchants, etc.

It goes without saying that in all cases where obligatory and forced deliveries had an *ad hoc* character they were preceded by a general prohibition of transactions of any kind—by the blocking of existing stocks.

Unfortunately there is very little statistical evidence on the development of the Cereal Export Directorate. Table 30 shows the total value of purchases effected by the Directorate from 1939 to 1946. The adjustment to price changes is made by deflation—i.e., by dividing the yearly sums in leva by the index numbers for producers' prices of field products (all crops minus fruits and vegetables). This procedure is not quite correct because tobacco, an important item in the index, was not subject to the activity of the CED.

Changes in the deflated figures are determined by three main factors: production of the monopolized products, extension of the monopoly system, and the price of tobacco. The growth of the purchases through 1943 shows the extension of the monopoly system. The temporary drop in 1942 is due to the bad harvest of that year and the disturbing effect produced by the relatively great rise (80

TABLE 30.—PURCHASES OF THE CEREAL EXPORT DIRECTORATE, 1939–46*

Year	Total value of purchases (*million leva*)	Price index numbers for field products	Physical volume of purchases (*million leva*)	Producers' price of tobacco (*leva per kilogram*)
	(1)	(2)	(3 = 1 ÷ 2)	(4)
1939.....	271	100	271	43
1940.....	314	115	273	43
1941.....	525	148	355	55
1942.....	346	183	190	96
1943.....	939	229	410	107
1944.....	903	438	206	207
1945.....	1,374	546	252	260
1946.....	636	589	108	260

* Data in column 1 from Bulgaria, Direction générale de la statistique, *Bulletin mensuel*, 1947, No. 2-3; columns 2 and 4 from Haute chambre d'économie nationale, *Narodno Stopanstvo*, 1947, No. 3.

percent) in the price of tobacco upon the adjustment of price changes. The downward tendency after 1943 should be attributed to the growing opposition of the farmers and to bad harvests (1945 and 1946).

REORGANIZATION OF TRADE IN ANIMAL PRODUCTS AND NONMONOPOLIZED VEGETAL PRODUCTS

While the system of state monopolies was being extended so far as to embrace all important vegetal products, efforts were made to control quantities and prices within the other sector of food supply—the supply of animal products. In one way or another, trade in animal products was reorganized. In many cases the organization of production was also affected.

Trade in animal products and nonmonopolized vegetal products had to undergo different degrees of organizational changes, beginning with the distribution of existing stocks and current supplies by the authorities and ending with the formation of semiofficial trade organizations which completely replaced private firms. There was a general feature in regulations concerning food trade: the merchants and their employees were mobilized in the sense of the Civil Mobilization Act. Merchants were not allowed to close their shops and employees could not leave the establishments where they worked without permission of the respective authorities. Another measure, ex-

tended to all branches of food trade, was the obligation of industrial enterprises and wholesale trade firms to report their food stocks every month to the Board of Industry and Internal Trade and to the Central Statistical Office as well.

The complicated system of the war organization of food trade (outside the state monopolies) can best be seen from the description of the regulations concerning the single branches of trade.

Meat.—The supply of meat was reorganized in 1942, first in May and again in July, according to the Regulation on Meat Supply for the Army and the Population issued on July 17, 1942. The main features of the new organization were as follows:

The owners of domestic animals (excluding poultry) were obliged to declare the animals they possessed and the current changes in livestock caused by birth and death or purchases and sales. The local authorities had to keep records on domestic animals available for meat supplies and to submit reports to the High Commissary of Supply. Transactions in domestic animals for meat production could take place only at the official markets. Similarly, slaughterings were allowed only in the slaughtering yards. For sales outside the markets and for slaughterings at home for home consumption it was necessary to obtain the special permission of the local Commissary of Supply, or, in the villages, of the mayor. The slaughtering yards reported to the High Commissary of Supply on meat production. On this basis the Commissary made his dispositions.

The supply of animals to the slaughtering yards was effected by delivery orders, which were given by the High Commissary of Supply to the local professional butchers' associations or to the semi-official Central Organization for Meat Supply (see p. 416). Private trade in domestic animals was forbidden.

A new regulation on meat supply, issued in August 1943 and designed to increase meat production, contained provisions for a slaughtering plan and forced deliveries. Percentage quotas, different for each kind of animal, indicating the part of the herd to be slaughtered (10 percent of the available cattle and buffaloes, 15 percent of the female sheep, 70 percent of the lambs, 15 percent of the goats, and 100 percent of the castrated sheep), served as a basis for the slaughtering plan which was worked out by districts. In all communities special committees were authorized to choose animals for slaughtering, if the animals offered by the farmers did not cover the delivery quota of the district listed in the plan. The purchases were based on orders given according to the following schedule of

priority: the army, the big cities, local consumption, stockpiling, fattening enterprises.

Fish.—The trade in fish from the Danube and Black Sea fisheries developed from the freest form of trade—sales at fish exchanges in the more important ports—to compulsory transactions between fishermen and merchants. The new trade system, as first set up in 1942 and modified in 1943, was based on contingents and obligatory deliveries. Every place on the Danube or on the Black Sea that had a fish exchange was allocated the supply region to which it had to send its catch. The wholesale and retail merchants in that region were assigned contingents according to which the catch had to be distributed. The fishermen were obliged to sell the catch and the merchants could not refuse to buy it at the fixed price. Only when the catch was larger than the demand for fresh fish was it permissible to preserve the fish.

Tallow.—According to the regulation of April 11, 1940 the technical staff of the slaughtering yards was instructed to deliver all tallow to the yards, and butchers outside the slaughtering yards were also obliged to do so. The administration of the communal slaughtering yards had to take charge of the storage; the administration of the district slaughtering yards was responsible for refining the tallow collected. A committee in which the High Commissariat of Supply and the Ministry of Agriculture were represented periodically distributed the tallow to merchants, handicrafts, and industrial establishments for payments obtained from money deposits previously made for this purpose.

Lard.—After January 31, 1941 all lard, when produced for sale, had to be delivered to the officially controlled refineries. In November 1941 delivery obligation was extended to lard and bacon produced for home consumption. For each pig slaughtered at home or in a slaughtering yard the following quantities of lard and bacon had to be turned in for public supplies, during a six months' period (kilograms):

First pig slaughtered:	
Weight under 120 kg.	3
Weight over 120 kg.	5
Second and successive pig slaughtered:	
Weight under 120 kg.	6
Weight over 120 kg.	10

Later these norms were increased. The Central Organization for Special Deliveries (see p. 416), Subdivision for Meat and Fats,

was charged with collecting the lard and bacon. The refined lard was directed to the army depots or the retail trade for the needs of the city population by delivery orders given by the High Commissary of Supply to the Central Organization for Special Deliveries.

Butter (from cow and buffalo milk).—As in the case of lard, the quantity control of butter supplies affected not only trade but also production. Toward the end of 1941 the first step in that direction was made concerning the butter supplies of the two largest cities—Sofia and Plovdiv. Production regions were bound to consumption centers by maximum producers', wholesale, and retail prices; transactions between the production region and outside places, except Sofia or Plovdiv, were forbidden.

One year later (December 25, 1942) a more general regulation was issued. In all districts with a sufficiently large milk production, "butter-production regions" were established. All producers of milk within any butter-production region were obliged, as far as geographical conditions allowed, to deliver the milk they produced to officially controlled dairies which produced no other dairy products than butter. Provisions were made to avoid repercussions on the supply of fresh milk to the cities.

Cheese (from sheep and goat milk).—Cheese being one of the basic foods for the army, special attention was paid to organizing the control of production. As early as 1940 all districts were divided into cheese-production regions so that each region should furnish milk to one dairy establishment. A detailed plan, containing the number and names of dairy operators and skilled dairy workers, the number of animals to be milked, minimum quantities to be produced, and the period of production, was attached to the regulation on this subject. The regulation was issued under the Civil Mobilization Act, which meant that dairy managers were obliged to start and maintain production, dairy workers to work at the dairies, and milk producers to deliver the milk they produced to the dairies. In places where no dairies were operating, milk producers had to produce cheese themselves under the control of the local authorities.

Milk producers were allowed to keep 1 liter of milk per household member daily for their own consumption or cheese production.

Eggs.—The trade in eggs was centralized in the hands of the Association of Egg and Poultry Exporters, which was a professional organization that embraced all merchants engaged in their branch of trade. All persons and firms collecting eggs from the producers were obliged to deliver whatever quantity they bought to the Association.

The Association was allowed to export eggs only after having satisfied to a certain degree the domestic demand, primarily the needs of the two largest cities—Sofia and Plovdiv. Regional and international price discrimination played an important role in the supply of eggs which was possible because the Association of Egg and Poultry Exporters had actually the monopoly of exports.

Sugar.—Because of the great importance of sugar for the urban population and for the army, the restrictions against the use of sugar beets outside the sugar factories were severe. They started with the prohibition of processing sugar beets in other establishments than sugar factories and of trading in any other sugar-beet products except sugar (July 1942). The next step was to forbid trading in sugar beets. Producers of sugar beets who did not have contracts with sugar factories were nevertheless obliged to deliver their sugar-beet output to the factories and the latter had to take the quantities offered to them (September 1942). Very soon final restrictions followed: the farmers were not allowed to use sugar beets on their farms in any way at all.

For each ton of sugar beets delivered to the sugar factory, farmers received a price of 920 leva (in 1942), 400 kilograms of sugar-beet pulp; and 1 kilogram of sugar. The mayors were authorized to mobilize the farmers if necessary in order to collect the beets from the fields.

Jams and dried fruits.—As long as the food supply for the needs of the urban population and the army was more or less satisfactory, both production of and trade in jams and dried fruits were free. In autumn 1942 the first regulation was issued, limiting the production of liquor from plums to one-fourth of the fresh plums produced on each farm. During the next year, 1943, the quantity control was extended to all kinds of fruit. The preservation of vegetables and fruit in any form, and the production of canned, dried, or otherwise processed vegetables and fruits, were subject to special permission from the High Commissariat of Supply, when such preservation was carried on for purposes of sale. Exporters of vegetables and fruits could export only after having fulfilled their delivery obligations for domestic consumption.

CONSUMERS' PRICES OF FOOD

Since no index of retail prices of food for the war period in Bulgaria has yet been published, we shall follow up the general move-

ment of consumers' prices of food in the frame of the cost-of-living index.

The cost of food went up faster than the total cost of living. This phenomenon, observed in many other countries, was due to the relative stability of housing rents which were more easily kept down by government regulations. Cost of food followed the upward movement of producers' prices of agricultural products (see Appendix Table XXV, p. 465).

Appendix Table XXVI shows the details of the movement of retail prices of food in the principal cities. Among all kinds of food there were two groups of products that held—as regards changes in retail prices—limiting positions: imported food with price indexes in 1942 (1939 = 100) ranging from 220 (tea) to 640 (pepper), and basic domestic food for domestic consumption, from 97 (dry beans) to 227 (lamb meat). For 1945 the respective figures are 1,391 (lemons, the only kind of imported food then available), 204 (dry beans), and 1,120 (butter). Nonbasic domestic food for domestic consumption (potatoes, white flour, honey, cabbage, vinegar, etc.) followed a middle path. Next to imported food it was export food (i.e., domestic food for domestic and foreign consumption) that moved on a high level. This group included tomatoes, onions, all kinds of fruits, wine, and liquor.

Two commodities deserve special attention—beans and eggs. They were important export articles and, in spite of that, had low prices. Dry beans were a state monopoly article. Eggs were sold in the cities by the Association of the Exporters of Eggs and Poultry. In both cases internal prices were kept low at the expense of export prices.

As in the case of producers' prices, the black market became important after 1942. Appendix Table XXVII is an official statement of black-market prices. It proves that the greatest scarcity was felt in the supply of overseas commodities (tea, coffee, pepper), sugar, dairy products, and meat.

The effect of black-market prices on the cost of food in December 1944 can be seen from the following cost-of-living figures relating to clerk households in Sofia (1939 = 100):

Item	Official prices	Illegal prices
Food	563	738
All items	470	1,013

The cost of food increased 30 percent when illegal prices were paid because of the insufficiency of the rations—that is to say, when ration quantities were bought at official prices, and the rest of consumption was bought at black-market prices.

CITATION

1 Bulgaria, Cereal Export Directorate, *Isvestia na Directiata sa Zakupuvane i Isnos na Zarneni Chrani* [*Bulletin of the Cereal Export Directorate*] (broadcast by the director, M. Dotcheff), April 1942.

CHAPTER 5

GENERAL CONCLUSIONS

MAIN FACTS OF FOOD SUPPLY

The food supply during World War II in Bulgaria is characterized by two outstanding occurrences: the bread-supply crisis of October 1941–June 1943, and the progressive deterioration of the general food situation in the cities after 1941. Although there is some connection between these two occurrences they should be considered separately. The general supply situation in the cities would have deteriorated even if there had been no bread-supply crisis; the bread-supply crisis broke out independently of the general course of development.

The immediate cause of *the bread-supply crisis* was a deficit in the food-cereal balance of the country of some 70,000 tons in the autumn of 1941, after the harvest had been collected. Like any other deficit, it was brought about by an unlucky coincidence of several events. The harvest of 1941 was less than average, yet not bad. However, the farmers' wheat deliveries to the Cereal Export Directorate were rather disappointing. In the *old state territory* farmers were authorized very high rations (900 grams daily per person, whereas the normal bread consumption of a "man in agriculture" was 628 grams; see Table 22, p. 406). In *Western Thrace*, where under normal conditions a surplus of 100,000 tons could reasonably be expected,[1] the free and forced deliveries were not sufficient to cover the local needs, owing to the fact that many fields had not been harvested by their owners. In order to save the situation, detachments of the Labor Service and of the army were set to work in the fields. In *Macedonia*, which was self-supporting in wheat when the harvest was good, a deficit of at least 20,000 tons was to be expected. In addition to this, the army blocked a large quantity of wheat for its reserves. On the other hand, the stocks of the Cereal Export Directorate stored in previous years were not sufficiently high. The export of wheat had been stopped, but this measure came too late.

[1] The Greek territories in Western Thrace (excluding the neutral zone of Soflu, Dimotica, and Féré, the Greek districts of Florina and Castoria), as well as the Yugoslav territories in Macedonia, were occupied by the Bulgarian army in April 1941.

As late as 1940 a large-scale export of wheat was going on. In that year 168,000 tons of wheat were exported, as follows (in thousand tons):

Italy	75
Germany	26
Great Britain	23
Greece	12
Other countries	32

At that time (1940) the prospects for the future were extremely favorable. Southern Dobruja, just reunited with Bulgaria, promised a net addition of at least 100,000 tons of food cereals to the wheat supply for 1941.[2] On the other hand, there were no reasons for keeping large reserves for the needs of the army. Relying on this outlook the government extended foreign trade, giving preference to imports of consumers' goods, especially textiles (finished commodities or raw materials), for which demand was very strong. The export of wheat was an important condition for success in this direction.

It is now obvious that had there been more caution in exporting wheat in 1940, or less effort to build up army wheat reserves in 1941, the bread-supply crisis might have been avoided in 1941 and eased in 1942, when a bad wheat harvest was the predominant cause of the scarcity of bread.

The *progressive deterioration of the general food situation in the cities after 1941* was mainly due to (*a*) low agricultural production (with the important exception after 1942 of wheat), (*b*) the steady and general rise of prices, (*c*) the permanent military mobilization, and (*d*) the weakening of government control upon production and trade.

Production and prices.—While low agricultural production reduced the amount of food available for consumption, the rise of prices further diminished the supply of food to the cities. Realizing

[2] All land in farms in Southern Dobruja amounted on December 31, 1946 to 458,000 hectares. According to Rumanian official statistics Southern Dobruja produced the following quantities of cereals in 1937 (in 1,000 tons):

Wheat	156
Corn	101
Barley	59
Oats	17
Rye	108
Millet	2
Total	443

the process of inflation, farmers began as early as 1942, or perhaps still earlier, to lose confidence in the purchasing power of money. Consequently, in the second half of the war period the farmers tried to reduce marketings and to escape obligatory deliveries, selling only as much of their products as was absolutely necessary to provide cash for current payments.

The inflation was due to rearmament expenditures, to the permanent mobilization of the army, and to the peculiar development of the balance of payments between Bulgaria and Germany. The visible source of the increasing quantity of money was the increasing amount of reichsmark holdings of the National Bank of Bulgaria. The holdings grew in spite of the fact that the balance of total obligations (short- and long-term obligations taken together) between Bulgaria and Germany was almost in equilibrium.[3] From Germany the Bulgarian government bought production equipment and war materials, which were paid for by long-term Treasury bills. As the National Bank of Bulgaria did not receive the value of these imports from the government in national currency (as was the case in private transactions),[4] it had to pay the Bulgarian exporters for their deliveries to Germany in newly issued means of payment.

If the Bulgarian government ordered civilian goods (production equipment) from German industry, it was done principally because of Germany's decreasing capacity to deliver consumers' goods or producers' goods for agriculture (i.e., the state orders for civilian goods were a substitute for commercial orders). The commodity composition of German imports to Bulgaria became more and more unfavorable for the Bulgarian internal market. The scarcity of such producers' goods as were needed in agriculture strengthened the farmers' reluctance to sell their products. Thus war economy outside Bulgaria, and especially the deterioration of the economic situation in Germany, indirectly affected the food supply of the cities in Bulgaria.

Military mobilization.—The general food-supply situation in the cities would have been much better had it not been for the permanent military mobilization, under which the army took away a considerable part of the food stocks and left still less for the actual consump-

[3] Data on this subject can be found in the Bank for International Settlements in Basel.

[4] The Law of March 9, 1940 authorized the National Bank of Bulgaria to utilize its reichsmark holdings to repurchase the Bulgarian Treasury bills given in payment to German heavy industries. Eventually arrangements were made for the bank to buy such bills so that, actually, cash was paid to the foreign firms and the National Bank granted credit to the government (*1*, p. 38).

tion of the urban population. The ration of the soldiers was much higher than that of an adult person of the urban population. Soldiers received for 155 days a year "ordinary meatless diet" equal to 3,421 calories a day, for 200 days "ordinary meat diet" (3,616 calories), and for 10 days "extraordinary meat diet" (4,495 calories).[5] An argument that might be adduced is that the persons who were mobilized were in the majority farmers whose consumption at home was of about the same calorie value and that there was consequently some compensation of gains and losses which ought to be taken into account. This objection can be refuted when we consider that the disturbing effect of deliveries to the army came not so much from the total bulk of food, expressed in calories, that was delivered, as from the huge amount of particular kinds of food like cheese and meat which, when taken away from the market, reduced the quantities available for consumption in the cities to very little and sometimes to nothing. Even the army's consumption of bread was a burden on the nutrition of the urban population to the extent that no reductions in the bread allowances of the farm population were made for mobilized, nonrecruited persons. The unfavorable influence of permanent mobilization on the food supply of the cities was much greater than that of German military exports from Bulgaria to the German forces in Greece, the quantities concerned (chiefly meat and fat) being in the first case—in proportion to the number of persons involved—10 to 20 times as large as in the second.

Government control.—As government control of production and trade grew in scope, and as the system of obligatory and forced deliveries was extended, the food supply became more and more dependent on social discipline and on the prestige of state authorities. The sudden death of King Boris III in August 1943, and the military collapse of Italy in the following month, which definitely destroyed all hopes of a favorable outcome of the war, had extremely detrimental effects on the functioning of the state machine and therefore on government control of production and trade. This also disturbed the organization of food supply in the cities.

HARMONY AND RIVALRY BETWEEN FOOD POLICY AND PRICE POLICY

As long as the general price level (or at least the sector of the price system in which farmers were interested) remained stable,

[5] Coefficients of food calorie contents used by the army are somewhat higher than the coefficients used by the Central Statistical Office (p. 405; see also 2, p. 26).

farmers reacted to the rise in the prices of single agricultural products in the long run (succeeding year) by increasing production, and in the short run (immediately) by increasing the marketing ratio. The same effect was obtained when, on the background of the general price rise, a very great increase in the prices of single commodities was authorized. This was psychologically possible as the disutility of labor in the important production regions was very small.

But the effect of rising prices was just the opposite when many kinds of farm products were affected or there was a general rise in prices of commodities the farmers bought. Under such circumstances, impressed by the inflation, farmers tried to save the substance of their income and their capital, and the greater the price advance was, the fewer goods they delivered. The necessary cash was acquired by selling only a minimum of products.

In view of these facts the best price policy proved at the same time to be the best food policy, namely, to keep the general price level stable. On the whole, both policies were in harmony; only in isolated cases—as when a decision for a change in the price of a single commodity had to be made—was there rivalry between the food policy and the price policy, and doubts as to the better policy were justified.

This explains some decisions of the Council of Ministers which were against price correction and led to a decrease in supplies of the respective commodities. It throws light also on the Bulgarian standpoint regarding terms of trade in the years 1940–41 when Bulgaria did not make the equality of price changes in imports and exports a *conditio sine qua non* for trade relations. Only a relatively small proportion of agricultural production (about 20 percent) was involved in international transactions. For the most important commodities, such as wheat, corn, dry beans, dairy products, and meat, which were the pillars of the price level, the export ratio was considerably smaller. It was a more favorable solution and a more efficient self-defense policy for the national food supply to fix smaller export contingents at lower prices than to accept larger export contingents at higher prices. The effort to keep pace with the upward movement of prices abroad would have meant giving internal prices an additional rising impulse. After 1941 this point of view was given up and prices rose more than before. It is difficult, if not impossible, to prove how much the new commercial policy contributed to the internal price development in the second half of the war period, especially since, at this time, the inflation was gaining in strength.

In the face of the progressing inflation the guiding principle of a stable general price level was replaced by two other principles: the first, to let the general price level advance slowly without losing command, and the second, at least to keep the adopted price system as stable as possible in spite of the movement of all individual prices. The efforts in the first direction became increasingly unsuccessful as time went on; those in the second direction led to satisfactory results as far as the relation between prices of domestic industrial products and prices of agricultural products is concerned (see p. 394).

How closely official prices followed the pressure of inflation can be seen from the comparison of computations of the cost of living on the basis of official and of black-market prices, given on page 437.

THE INTERDEPENDENCE BETWEEN ECONOMIC AND SOCIAL ORGANIZATION

The legal basis of the government measures which allowed the introduction of controlled economy was at first very deficient. A prewar Price Control Act giving to the Minister of Commerce, Industry, and Labor the mere right to determine prices without efficient sanctions was the only legal instrument authorizing interference in production and consumption. This weakness in the management of controlled economy was removed in the spring of 1940 when the Supply Security and Price Regulation Act of May 17 and the Civil Mobilization Act of May 4 were passed by the National Assembly. Both acts were intended only for the time of the war emergency.

The Supply Security and Price Regulation Act provided for the institutions to be created and the methods to be used in price and quantity control. However, by virtually giving to the Minister of Commerce, Industry, and Labor the corresponding right of determining prices, costs, quality, and quantity of any kind of industrial and agricultural products in production and trade, it restricted two of the principal rights of the individual in the economic sphere of life: the freedom of production and the freedom of consumption. Beyond that the act contained very severe sanctions and—breaking with the old legal tradition according to which jurisdiction lay entirely in the hands of the courts—it authorized the Administration to issue penalty orders.

The Civil Mobilization Act had a wider scope. It dealt more with the principles on which rested the relation between the state and individuals, and went much further in restricting the people's rights

than the Supply Security and Price Regulation Act. It increased restrictions on the freedom of production and the freedom of consumption, and even affected the free choice of place of residence and of occupation. The emergency powers which were concentrated in the hands of the Council of Ministers almost completely abolished, though temporarily, private disposition of the means of production.

The functioning of the economic control system very soon caused the government great concern for two reasons. On the one hand, the state organs charged with the application of the Civil Mobilization Act very often went too far in their activities. On the other hand, the producers were not ready to co-operate as much as was necessary for the smooth functioning of the system.

The main organ of Civil Mobilization, which *de facto* exercised a kind of control upon the ministries in different ways, was the Civil Mobilization Directorate. This agency was at first subordinate to the Council of Ministers through the Minister of War. The staff of the board being nominated by the Minister of War, its standpoint was in many important cases inclined to be noncivilian. There was a clear tendency to put the needs of the army in the forefront and to interfere in matters for which other authorities were responsible. In order to preserve the unity of administration one important change in organization was made: in December 1941 the Civil Mobilization Directorate was made directly subordinate to the Prime Minister.

As the control of production and trade represented a substantial restriction of the rights of the individual, the need to influence the producers in favor of the new economic regime was becoming more and more urgent. The idea of giving producers the possibility of defending their interests directly, and of letting them share the responsibility of economic administration, led to the creation of the so-called "professional organizations" or "unions." This was achieved by the Professional Organizations Act of June 24, 1941, which incorporated the existing trade unions and associations of business managers into the structure of the state. Obviously there was in this act an element of the corporative state, namely, the official character of professional organizations. But there was no connection whatever between professional organizations and Parliament or between professional organizations and the government. The act organized the active population (the gainfully occupied persons) into seven unions: Farmers' Union, Manual Workers' Union, Intellectual

Workers' Union, Handicrafts Union, Industrial Union, Commercial Union, and Credit and Insurance Union.

The Farmers' Union (Obsht Sajus na Zemedelskite Zadrugi) was the largest. It was indeed the biggest organization the country had ever seen. More than 50 percent of the farmers joined the union (payment of membership fees was obligatory for all gainfully occupied persons). But the influence of the union upon its members was not very strong. It had a political "credo"—the constitution with its principles of adherence to the monarchy and of the rights of the individual in the sense of the French Revolution—but it had not the apparatus for the internal control of a political party. The union always succeeded in uniting the farmers when their interests were in danger, but it was not in a position to induce them to bear sacrifices—the decisive problem of war economy which became the more important the longer the war lasted.

THE INTEGRITY OF ECONOMIC POLICY

In analyzing the development of war economy we find that the term "Integrity of Economic Policy" can be interpreted in two different ways: (*a*) the necessity of achieving *co-ordination* of the activities of the ministries as far as economic life is concerned, and (*b*) the necessity of *extending government control* (price and quantity control) to all branches of production and trade and to all factors of production.

Co-ordination was effected on two superimposed levels: it was necessary to co-ordinate the decisions on economic matters—the activity of the ministers who had to deal with national economy—and to co-ordinate the execution of the decisions thus taken—the activities of the state agencies belonging to different ministries. The principles of economic policy were laid down by the Council of Ministers, but the decisions on concrete economic questions were referred to a committee of four ministers—the Ministers of Finance, of Commerce, Industry, and Labor, of Agriculture, and of War.

Co-ordination of the activities of the state agencies belonging to different ministries was in the hands of the Civil Mobilization Directorate (see above), which fulfilled this function with the help of liaison officers in each ministry.

In June 1943 co-ordination was reorganized: the High Commissary of War Economy was nominated, who took over the functions of the Committee of the Four Ministers and the co-ordinating functions of the Civil Mobilization Directorate.

A much more interesting feature from the economic point of view was the integrity of economic policy, in the sense of extension of control over all branches of production and trade, and over all factors of production.

In the present investigation we have arrived at three general statements. We have found that during World War II there was in Bulgaria:

a) a tendency to extend price control over all kinds of commodities,
b) a tendency to develop the activity of the Cereal Export Directorate (the Directorate of State Monopolies of Farm Products) so far as to embrace all trade with vegetal production, and
c) a tendency to order more and more obligatory and forced deliveries.

And here we must add the tendency to regulate wages by government decisions (this was not discussed above as it does not belong to our subject).

Now the question arises: Was this development predominantly the result of "internal" or of "external" forces? Did the extension of government control go so far "by itself," like an organic process, which once started does not stop until it takes a definite shape, or was it the reaction due to an increasing pressure from outside, like an inundation which is replenished only by new floods? The facts commented on in this paper seem rather to confirm this latter view.[6] Quantity control was extended further and further because price control expanded, and price control expanded because the inflation advanced more and more. There are different grades of inflation and for every grade of inflation we find that a different extent of government control upon production and trade is necessary.

CITATIONS

1 N. Momtchiloff, *Ten Years of Controlled Trade in South-Eastern Europe* (Cambridge, 1944).

2 Bulgaria, Direction générale de la statistique, *Revue de la statistique générale de la Bulgarie*, 1946, Nos. 3-4.

3 S. S. Demosthenov, *Food Supply in Russia During the World War* (New Haven, 1930).

[6] On this subject see the interesting investigation of S. S. Demosthenov (*3*).

APPENDIX TABLES

TABLE I.—PHYSICAL VOLUME OF NET OUTPUT, 1926–42*

Year	Net value of production of agriculture, forestry, fishery, and industry including handicrafts at *current prices* (*Billion leva*)	Wholesale price index (1926 prices = 100)	Net value of production of agriculture, forestry, fishery, and industry including handicrafts at *constant prices (1926)*	
			Billion leva	Index numbers
	(1)	(2)	(3) = (1) : (2)	(4)
1926.....	35.1	100	35.1	100
1927.....	36.7	100	36.7	105
1928.....	39.9	108	37.0	106
1929.....	38.2	111	34.6	99
1930.....	32.3	90	36.0	103
1931.....	28.9	73	39.6	113
1932.....	24.8	64	38.7	111
1933.....	22.7	58	39.1	112
1934.....	21.9	60	36.5	104
1935.....	23.5	61	38.5	110
1936.....	29.1	61	47.7	136
1937.....	33.0	69	48.0	137
1938.....	36.5	71	51.4	146
1939.....	40.3	72	56.0	160
1940.....	44.0	83	53.0	151
1941.....	59.2	106	56.0	160
1942.....	69.5	134	51.8	148

* Data from A. Tchacaloff, "The National Income of Bulgaria, 1924–1935," *Publications of the Statistical Institute for Economic Research* (Univ. of Sofia), 1937, No. 2, p. 88; Bulgaria, Haute chambre d'économie nationale, *Le revenu de la Bulgarie, 1936–1945* (1947), pp. 73, 84.

TABLE II.—PHYSICAL VOLUME OF NET OUTPUT, 1939–46: NET VALUE OF PRODUCTION AT CONSTANT (1939) PRICES*

Year	Agriculture, forestry, fishery, and industry including handicrafts		Big industry only
	Billion leva	Index numbers	Index numbers
1939.....	33.6	100	100
1940.....	31.5	94	112
1941.....	34.2	102	118
1942.....	33.5	100	114
1943.....	31.5	94	111
1944.....	29.1	86	98
1945.....	26.8	80	112
1946.....	29.6	88	115

* Data from Bulgaria, Direction générale de la statistique, *Bulletin mensuel*, 1947, No. 2-3, p. 63, and 1948, No. 9-10, p. 170.

TABLE III.—AVERAGE MONTHLY PHYSICAL VOLUME OF COMMODITY TRANSACTIONS, 1926–42*

Year	Cash payments of the National Bank		Wholesale price index	Substitute for an index of physical volume of commodity transactions (2:3)
	Million leva	Index numbers		
	(1)	(2)	(3)	(4)
1926	2,991	100	100	100
1927	3,363	112	100	112
1928	3,611	121	108	112
1929	3,722	124	111	112
1930	3,213	107	90	119
1931	2,850	95	73	130
1932	2,315	77	64	120
1933	2,070	69	58	119
1934	2,037	68	60	113
1935	2,108	70	61	115
1936	2,535	85	61	140
1937	2,951	98	69	142
1938	3,182	106	71	150
1939	3,663	122	72	169
1940	4,777	159	83	192
1941	8,313	277	106	261
1942	10,410	347	134	256

* Cash payments from *Publications of the Statistical Institute for Economic Research* (Univ. of Sofia), 1936, No. 1, p. 53; Bulgaria, Direction générale de la statistique, *Bulletin mensuel*, 1937, No. 3, and 1943, No. 1, p. 12. Wholesale prices from Appendix Table I.

TABLE IV.—AREA OF LABOR- AND CAPITAL-INTENSIVE CULTURES, 1930–34 AVERAGE AND 1938*

(*Thousand hectares*)

Crop	1930–34 average	1938	1938 as percent of 1930–34 average
Sunflower	86.1	189.4	220
Rapeseed	8.7	21.7	238
Groundnuts	0.2	2.6	1,300
Soybeans	—	12.3	—
Opium poppy	0.5	0.9	180
Cotton	11.8	55.0	466
Flax	4.5	10.0	222
Hemp	0.6	3.0	500
Onions	2.5	4.9	196
Pepper	3.7	5.7	154
Tomatoes	0.9	1.8	200
Grapes	93.4	114.8	123
Apples	1.3	12.0	923
Pears	0.1	1.9	1,900

* Data from Bulgaria, Direction générale de la statistique, *Annuaire statistique du Royaume de Bulgarie, 1941* (1941), pp. 278–283.

TABLE V.—EXPORTS OF PRODUCTS OF EXPANDING CULTURES, TOTAL AND TO GERMANY, IN 1939*

Product	Total (*tons*)	To Germany	
		Tons	Percent
Tobacco	33,553	21,832	66
Soybeans	4,307	4,307	100
Grapes	57,205	52,462	91
Strawberries:			
fresh	826	808	98
preserved	7,427	4,583	62

* Data from Bulgaria, Direction générale de la statistique, *Annuaire statistique du Royaume de Bulgarie, 1941* (1941).

TABLE VI.—INDEXES OF PHYSICAL VOLUME OF FOREIGN TRADE, 1926–38: VALUE AT CONSTANT (1926) PRICES*

Year	Exports	Imports
1926	100	100
1927	111	102
1928	97	112
1929	81	132
1930	112	81
1931	151	98
1932	118	93
1933	101	63
1934	92	66
1935	105	89
1936	127	96
1937	144	135
1938	157	141

* Data from I. Stefanoff, "The Foreign Trade of Bulgaria After the World War," *Publications of the Statistical Institute for Economic Research* (Univ. of Sofia), 1938, No. 2-3, p. 3.

TABLE VII.—INDEXES OF PHYSICAL VOLUME OF NET OUTPUT IN GERMANY AND BULGARIA, 1931–38*

Year	Germany	Bulgaria
	Official index of industrial production (net value of industrial production at constant prices)	Net value of production of agriculture, forestry, fishery, and industry, including handicrafts at constant prices (1926)
1929	100	100
1931	68	112
1932	53	110
1933	61	111
1934	80	103
1935	94	109
1936	106	135
1937	117	136
1938	126	144

* Data for Germany from League of Nations, Econ. Intel. Serv., *Statistical Year-Book, 1939/40* (Geneva, 1940), p. 164; data for Bulgaria based on Appendix Table I.

TABLE VIII.—EXPORTS OF TOBACCO AND EGGS, 1921–39*

Year	Share of tobacco and eggs in all Bulgarian exports (*Percent of value*)			Germany's share in Bulgarian exports of tobacco and eggs (*Percent of quantity*)	
	Tobacco	Eggs	Together	Tobacco	Eggs
1921	41	4	45	29	—
1922	47	8	55	52	10
1923	43	7	50	18	18
1924	48	10	58	34	24
1925	47	12	59	36	19
1926	37	14	51	33	32
1927	32	13	45	35	31
1928	36	9	45	38	44
1929	45	12	57	36	52
1930	43	14	57	28	57
1931	44	14	58	43	40
1932	32	19	51	52	35
1933	41	16	57	61	24
1934	39	14	53	68	44
1935	43	12	55	58	65
1936	32	12	44	66	76
1937	31	8	39	50	69
1938	42	8	50	66	72
1939	41	9	50	72	80

* Data from I. Stefanoff, "The Foreign Trade of Bulgaria after the World War," *Publications of the Statistical Institute for Economic Research* (Univ. of Sofia), 1938, No. 2–3, pp. 43, 77; Bulgaria, Direction générale de la statistique, *Annuaire statistique du Royaume de Bulgarie, 1941* (1941).

TABLE IX.—GROSS REAL INCOME OF CEREAL FARMS, 1934–39: PURCHASING POWER OF GROSS INCOME PER HECTARE*

Year	Yield of wheat per hectare	Producers' price of wheat	Value of wheat yield per hectare		Expenditures at constant quantities (1934/35)	Gross real income
				Index numbers	Index numbers	
	(*Kg.*)	(*Leva*)	Leva			
	(1)	(2)	(3)	(4)	(5)	(6 = 4 ÷ 5)
1934.....	875	3.2	2,742	100	100	100
1936.....	1,370	3.0	4,110	150	108	139
1937.....	1,350	3.2	4,320	158	121	130
1938.....	1,540	3.4	5,236	191	125	153
1939.....	1,372	3.5	4,802	175	122	143

* Data from Bulgaria, Direction générale de la statistique, *Annuaire statistique du Royaume de Bulgarie, 1937, . . . 1939,* and *. . . 1941*; *Bulletin mensuel,* 1946, No. 10-11, p. 288, and 1947, No. 11, p. 304; *Revue de la statistique générale de la Bulgarie et Bulletin mensuel,* 1945, No. 1, p. 10.

TABLE X.—LAND PROPERTIES AND FARMS, 1934*

(*Percentage distribution*)

Classes (*Hectares*)	Number		Area	
	Properties	Farms	Properties	Farms
Under 2	23.1	17.1	4.7	3.2
2–5	39.0	36.8	24.9	21.2
5–10	25.6	31.5	32.9	36.4
10–30	11.7	14.1	32.1	34.2
30 and over	0.6	0.5	5.4	5.0
Total	100.0	100.0	100.0	100.0

* Data from S. Sagoroff (Zagoroff), "Die Grundbesitzverhältnisse," in J. S. Mollof, *Die Sozialökonomische Struktur der Bulgarischen Landwirtschaft* (International Conference of Agricultural Economists, Berlin, 1936), p. 87.

"Land properties" are ownership units; "farms" are operational units.

TABLE XI.—DISTRIBUTION OF CROPLAND BY CROPS, 1935/36–1944/45*

(Thousand hectares)

Crop	1935/36	1936/37	1937/38	1938/39	1939/40	1940/41	1941/42	1942/43	1943/44	1944/45	Averages 1935/36–1938/39	Averages 1940/41–1943/44
Food cereals	1,490	1,689	1,696	1,601	1,560	1,612	1,497	1,583	1,586	1,496	1,619	1,570
Feed cereals	1,026	1,064	1,081	1,034	1,003	1,235	1,316	1,200	1,114	1,061	1,051	1,216
Tobacco	42	39	31	43	53	52	48	54	44	45	39	49
Sugar beets	5	10	12	13	17	20	23	29	24	31	10	24
Oil-bearing crops	183	204	238	205	179	276	222	184	151	148	207	208
Fiber plants	40	63	68	37	43	42	39	40	38	37	52	40
Beans	83	103	108	65	79	136	168	189	210	193	90	176
Potatoes	16	22	20	16	18	25	35	39	37	30	19	34
Melons	40	55	55	44	39	50	55	87	85	83	49	69
Vegetables	14	22	20	23	25	27	27	36	32	32	20	30
Fodder crops (hay sown)	211	266	266	190	225	267	314	306	299	319	233	296
Other crops	10	10	6	15	17	24	17	22	20	15	10	21
Area sown	3,160	3,547	3,601	3,286	3,258	3,766	3,761	3,769	3,640	3,490	3,399	3,733
Fallow land	446	443	480	520	534	505	490	482	570	695	472	512
Permanent meadows	279	305	308	293	295	294	299	293	285	276	296	293
Multiennial cultures	144	161	170	192	293	216	214	211	214	219	167	214
Total cropland	4,029	4,456	4,559	4,291	4,290	4,781	4,764	4,755	4,709	4,680	4,334	4,752

* Data from Bulgaria, Direction générale de la statistique: *Annuaire statistique du Royaume de Bulgarie, 1941* (1941); *Revue de la statistique générale de la Bulgarie et Bulletin mensuel*, 1945, No. 1; *Bulletin mensuel*, 1946, No. 1, and 1947, No. 11.

TABLE XII.—DISTRIBUTION OF CROPLAND BY CROPS, 1935/36–1944/45*

(Percent)

Crop	1935/36	1936/37	1937/38	1938/39	1939/40	1940/41	1941/42	1942/43	1943/44	1944/45	Averages 1935/36–1938/39	Averages 1940/41–1943/44
Food cereals	37.0	37.9	37.2	37.3	36.4	33.7	31.4	33.3	33.7	32.0	37.4	33.0
Feed cereals	25.5	23.9	23.7	24.1	23.4	25.8	27.6	25.2	23.7	22.7	24.2	25.6
Tobacco	1.0	0.9	0.7	1.0	1.3	1.1	1.0	1.1	0.9	1.0	0.9	1.0
Sugar beets	0.1	0.2	0.3	0.3	0.4	0.4	0.5	0.6	0.5	0.6	0.2	0.5
Oil-bearing crops	4.6	4.6	5.2	4.8	4.2	5.8	4.7	3.9	3.2	3.2	4.8	4.4
Fiber plants	1.0	1.4	1.5	0.9	1.0	0.9	0.8	0.9	0.8	0.8	1.2	0.8
Beans	2.1	2.3	2.4	1.5	1.8	2.8	3.5	4.0	4.5	4.1	2.1	3.7
Potatoes	0.4	0.5	0.4	0.4	0.4	0.5	0.7	0.8	0.8	0.6	0.4	0.7
Melons	1.0	1.2	1.2	1.0	0.9	1.0	1.2	1.8	1.8	1.8	1.1	1.5
Vegetables	0.3	0.5	0.4	0.5	0.6	0.6	0.6	0.8	0.7	0.7	0.5	0.6
Fodder crops (hay sown)	5.2	6.0	5.9	4.4	5.2	5.6	6.6	6.4	6.4	6.8	5.4	6.2
Other crops	0.2	0.2	0.1	0.4	0.3	0.5	0.3	0.5	0.4	0.3	0.2	0.5
Area sown	78.4	79.6	79.0	76.6	75.9	78.7	78.9	79.3	77.4	74.6	78.4	78.5
Fallow land	11.1	9.9	10.5	12.1	12.5	10.6	10.3	10.1	12.1	14.8	10.9	10.8
Permanent meadows	6.9	6.9	6.8	6.8	6.9	6.2	6.3	6.2	6.0	5.9	6.8	6.2
Multiennial cultures	3.6	3.6	3.7	4.5	4.7	4.5	4.5	4.4	4.5	4.7	3.9	4.5
Total cropland	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Based on data in Appendix Table XI.

TABLE XIII.—PRODUCERS' PRICES OF AGRICULTURAL PRODUCTS 1939–46*

(Leva per kilogram except as noted)

Product	1939	1940	1941	1942	1943	1944	1945	1946
VEGETAL PRODUCTS								
Wheat	3.45	4.31	6.13	6.11	8.17	13.80	17.00	17.00
Rye	2.52	3.03	5.20	5.19	7.10	11.80	15.00	15.00
Spelt	2.92	2.91	5.50	4.20	5.45	10.00	10.00	13.00
Barley	2.60	3.40	3.56	4.05	6.10	9.80	12.00	13.00
Corn	2.52	3.30	3.81	4.28	6.23	10.00	12.00	13.00
Rice (milled)	13.30	12.30	15.00	18.80	19.30	64.00	79.00	118.00
Millet	5.03	6.12	6.51	6.75	6.91	12.00	12.00	17.00
Chick-peas	5.98	9.00	26.44	16.45	16.23	15.00	15.00	18.00
Peas	5.47	6.70	24.76	24.77	25.00	20.00	20.00	25.00
Lentils	6.24	8.66	10.00	15.00	15.00	20.00	20.00	25.00
Dry beans	7.67	6.94	8.05	8.09	10.00	15.00	15.00	18.00
Potatoes	2.16	3.27	3.83	4.10	7.00	17.00	32.00	34.00
Sugar beets	0.50	0.57	0.70	0.92	1.50	3.50	4.50	4.50
Groundnuts	10.19	28.00	32.00	34.00	35.00	88.00	245.00	320.00
Sesame	9.63	25.71	34.00	25.00	25.00	45.00	100.00	350.00
Soybeans	5.00	6.50	6.50	6.50	9.00	18.00	18.00	30.00
Sunflower seed	3.60	4.95	4.80	6.21	8.00	18.00	23.00	25.00
Rapeseed	5.40	4.80	4.12	6.24	7.96	18.00	18.00	25.00
Opium[a]	4.95	6.87	18.09	19.90	15.60	70.34	70.34	70.34
Castor beans	4.95	6.00	5.65	6.00	9.00	18.00	18.00	35.00
Hemp fiber	23.92	18.98	27.85	20.06	38.60	100.00	165.00	210.00
Flax fiber	28.34	43.48	48.13	49.48	56.05	146.00	300.00	400.00
Cotton fiber	34.84	48.03	64.08	73.38	80.31	330.00	275.00	275.00
Aniseed	11.10	23.41	37.00	30.00	30.00	45.00	300.00	425.00
Tobacco	42.94	43.35	55.24	95.87	107.00	207.00	260.00	260.00
Vetch (grain)	3.81	4.30	5.38	5.39	7.26	13.20	14.00	17.00
Pumpkins	0.45	1.13	1.13	1.13	1.50	5.25	6.00	7.00
Oats	3.35	3.60	3.99	4.05	6.10	11.88	14.00	15.00
Hay (permanent meadows)	1.50	2.00	2.50	3.00	4.00	7.27	11.59	16.00
Pepper	2.12	3.01	3.94	5.36	7.84	18.72	20.00	14.00
Tomatoes	2.15	2.86	3.55	5.05	7.02	17.75	17.50	14.00
Cabbage	1.30	2.12	2.25	3.26	4.59	9.67	15.50	15.00
Onions	1.68	2.26	4.25	6.31	5.46	15.18	26.00	20.00
Apples	4.40	7.85	9.25	11.31	16.43	33.05	35.73	35.00
Pears	4.02	7.07	8.62	12.16	16.47	30.69	32.36	30.00
Prunes	1.93	3.81	5.96	6.23	9.78	22.54	21.87	20.00
Nuts	7.98	10.55	19.10	23.16	40.50	62.47	70.76	100.00
Peaches	4.26	6.75	6.87	11.20	12.32	27.23	25.80	35.00
Grapes	3.60	8.70	9.80	12.70	14.00	18.00	25.00	25.00
ANIMAL PRODUCTS								
Meat:								
Beef	11.00	11.00	13.00	19.00	33.00	52.00	52.00	62.00
Veal	11.80	13.00	15.60	22.00	40.00	68.00	68.00	80.00
Buffalo	9.00	9.00	11.00	17.00	32.00	48.00	48.00	58.00
Buffalo calf	11.80	13.00	15.60	21.00	36.50	64.00	64.00	74.00
Mutton	11.50	14.00	20.00	22.00	37.00	52.00	52.00	70.00
Sheep (ewe)	11.50	12.00	17.00	18.00	32.00	50.00	50.00	70.00
Lamb	12.10	20.00	24.00	34.00	55.00	60.00	110.00	150.00
Pork	15.80	18.50	30.00	40.00	65.00	125.00	125.00	140.00
Milk:[b]								
Cow	3.46	3.34	5.19	8.00	10.00	13.00	36.00	40.00
Sheep	4.88	4.30	6.77	9.00	11.00	15.00	25.00	25.00
Goat	3.40	3.38	4.40	5.00	6.50	10.00	20.00	20.00
Butter:								
Cow	55.00	65.00	75.00	180.00	350.00	400.00	552.00	700.00
Sheep	39.00	40.00	48.00	60.00	100.00	160.00	240.00	380.00
Cheese:								
White	20.25	19.94	24.20	27.59	39.07	60.00	110.00	125.00
Cashcaval	38.00	38.00	44.00	49.00	60.00	100.00	150.00	165.00
Eggs[c]	0.95	1.10	1.50	2.20	4.50	5.50	6.00	8.00
Wool	57.24	58.00	67.06	83.96	89.38	200.00	250.00	250.00

* Data from Bulgaria, Haute chambre d'économie nationale, *Narodno Stopanstvo*, 1947, No. 3, pp. 22–29. [a] Per ten grams. [b] Per liter. [c] Per piece.

TABLE XIV.—GROSS REAL INCOME OF CEREAL FARMS, 1939–46: PURCHASING POWER OF GROSS INCOME PER HECTARE*

Year	Yield of wheat per hectare	Producers' price of wheat	Value of wheat yield per hectare		Expenditures at constant quantities	Real gross income	Yield of wheat per hectare
	(*Kg.*)	(*Leva*)	Leva	Index numbers	(1939)	Index numbers	
	(1)	(2)	(3)	(4)	(5)	(6 = 4 ÷ 5)	(7)
1939.....	1,372	3.5	4,802	100	100	100	100
1940.....	989	4.3	4,253	89	118	75	72
1941.....	900	6.1	5,490	114	145	78	66
1942.....	618	6.1	3,770	79	175	45	45
1943.....	1,112	8.2	9,118	190	224	85	81
1944.....	1,168	13.8	16,118	336	370	91	85
1945.....	773	17.0	13,141	174	599	46	56
1946.....	1,135	17.0	19,295	402	649	62	83

* Data for 1939 from Appendix Table IX. Later years from Bulgaria, Direction générale de la statistique, *Bulletin mensuel*, 1947, No. 2-3, p. 52, and Haute chambre d'économie nationale, *Narodno Stopanstvo*, 1947, No. 3, p. 25. See also Appendix Table XV.

TABLE XV.—YIELD PER HECTARE OF PRINCIPAL CROPS, 1937–45*

(Quintals per harvested hectare)

Crop	1937	1938	1939	1940	1941	1942	1943	1944	1945	Averages 1937–1939	Averages 1940–1942	Averages 1943–1945
Wheat	13.5	15.4	13.7	9.9	9.0	6.2	11.1	11.7	7.7	14.20	8.37	10.17
Rice (rough)	27.5	24.7	35.0	28.9	25.3	30.5	23.4	23.8	11.0	29.07	28.23	19.40
Corn	12.6	7.6	13.9	13.0	11.5	5.9	6.7	10.1	3.0	11.37	10.13	6.60
Barley	15.1	15.8	16.5	11.5	10.1	6.6	11.7	8.7	6.0	15.80	9.40	8.80
Oats	9.8	6.2	10.2	8.8	8.6	6.2	9.0	6.2	3.5	8.73	7.87	6.23
Tobacco	9.1	8.3	9.6	8.4	7.5	8.6	7.0	7.3	5.0	9.00	8.17	6.43
Sugar beets	199	110	177	167	172	94	122	138	41	162.0	144.3	100.3
Rapeseed	8.0	9.5	6.2	4.3	4.8	2.6	5.2	4.9	2.8	7.90	3.90	4.30
Sunflower seed	9.1	6.2	10.0	9.9	7.8	5.4	5.1	6.2	2.3	8.43	7.70	4.53
Soybeans	9.4	5.4	9.5	10.5	11.4	4.1	5.5	6.7	2.2	8.10	8.67	4.80
Cotton fiber	2.2	1.3	2.3	2.3	1.2	1.1	0.8	1.2	0.5	1.93	1.53	0.83
Hemp fiber	5.6	4.1	6.3	6.3	6.3	5.8	4.1	4.5	2.3	5.33	6.13	3.63
Flax fiber	2.5	...	3.5	4.1	5.6	2.8	5.7	5.5	3.7	3.00	4.17	4.97
Dry beans	5.8	0.7	6.8	9.1	10.9	6.6	9.8	8.7	3.4	4.43	8.87	7.30
Potatoes	66.7	31.8	77.6	68.9	73.7	49.4	55.8	48.6	14.7	58.70	64.00	39.70
Cabbage	383	298	286	260	254	217	221	...	...	322.3	243.7	...
Onions	113	76	112	97	93	75	95	...	...	100.3	88.3	...
Pepper	152	151	119	103	94	118	99	...	...	140.7	105.0	...
Tomatoes	306	305	208	193	160	172	167	...	...	273.0	175.0	...
Vetch (hay)	...	...	30.3	32.6	32.0	19.8	27.3	21.2	7.6	...	28.13	18.70
Hay (permanent meadows)	29.1	22.3	28.0	27.5	25.4	19.2	17.6	19.3	7.1	26.47	24.03	14.67
Grapes	...	...	54.4	...	...	46.1	49.7	44.7	46.8	...	...	47.07
Plums	...	...	58.7	3.9	25.4	46.6	...	...	...	...	25.30	...
Strawberries	46.2	56.8	64.3	83.9	55.5	47.4	51.9	48.1	38.1	55.77	62.27	46.03
Roses	...	...	18.8	11.2	6.8	5.7	13.6	10.8	6.6	...	7.90	10.33

* Data from Bulgaria, Direction générale de la statistique: *Annuaire statistique du Royaume de Bulgarie, 1941* (1941); *Revue de la statistique générale de la Bulgarie et Bulletin mensuel*, 1945, No. 1; *Bulletin mensuel*, 1946, No. 1, and 1947, No. 11.

TABLE XVI.—AGRICULTURAL PRODUCTION 1937–45—*Continued*
(*Thousand quintals*)

Crop	1937	1938	1939	1940	1941	1942	1943	1944	1945	Averages 1937–39	Averages 1940–42	Averages 1943–45
Wheat	17,666	21,487	18,572	13,058	12,249	7,824	14,982	15,810	9,918	19,242	11,047	13,570
Rye	2,384	1,879	1,951	1,579	1,380	847	1,479	1,538	852	2,071	1,269	1,290
Meslin	2,157	1,316	854	643	468	357	521	471	346	1,442	489	446
Rice (rough)	158	191	309	271	296	469	284	180	108	219	345	191
Food cereals	22,365	24,873	21,686	15,551	14,393	9,497	17,266	17,999	11,224	22,975	13,147	15,496
Corn	8,593	5,323	9,495	8,737	9,228	5,125	5,261	7,575	2,333	7,804	7,697	5,056
Barley	3,299	3,548	3,624	2,171	2,340	1,434	2,475	1,692	983	3,490	1,982	1,717
Oats	1,465	891	1,143	1,050	1,495	1,153	1,512	910	499	1,166	1,233	974
Spelt	88	83	133	92	64	45	96	97	51	101	67	81
Millet	40	12	55	103	99	96	63	38	10	36	99	37
Feed cereals	13,485	9,857	14,450	12,153	13,226	7,853	9,407	10,312	3,876	12,597	11,077	7,865
Tobacco	354	259	409	440	393	417	381	324	228	341	417	311
Sugar beets	2,093	1,286	2,293	2,769	3,373	2,190	3,498	3,275	1,260	1,891	2,777	2,678
Sunflower seed	1,634	1,175	1,583	1,305	1,555	908	774	866	326	1,464	1,256	655
Sesame	14	2	20	17	13	6	5	2	1	15	12	3
Groundnuts	30	20	17	11	10	7	9	5	5	22	9	6
Rapeseed	28	206	108	5	14	11	20	15	4	114	10	13
Soybeans	114	67	171	373	680	184	126	42	15	117	409	61
Oil-bearing crops	1,820	1,470	1,899	1,701	2,272	1,116	934	930	351	1,733	1,696	738
Cotton fiber	102	69	67	78	34	24	16	23	11	79	45	17
Hemp fiber	46	41	42	47	60	60	35	31	17	43	56	28
Flax fiber	5	3	1	4	12	6	8	8	3	3	7	6

Crop	1937	1938	1939	1940	1941	1942	1943	1944	1945	Averages 1937–39	Averages 1940–42	Averages 1943–45
Fiber plants	153	113	110	129	106	90	59	62	31	125	108	51
Dry beans	...	...	906	1,197	1,857	2,174	2,459	1,828	569	...	1,743	1,649
Lentils	37	13	28	35	42	31	67	84	34	26	36	61
Beans	37	17	934	1,232	1,899	2,205	2,526	1,912	693	26	1,779	1,710
Potatoes	1,460	635	1,266	1,226	1,864	1,724	2,198	1,821	436	1,120	1,605	1,485
Cabbage	1,172	728	967	820	905	821	873	...	...	956	849	...
Onions	628	377	434	407	375	383	799	...	...	480	388	...
Pepper	778	857	947	1,035	986	1,008	872	...	...	861	1,010	...
Tomatoes	535	539	400	420	527	455	481	...	...	491	467	...
Vegetables	3,113	2,501	2,748	2,682	2,793	2,667	3,025	...	...	2,787	2,714	...
Hay (permanent meadows)	...	...	8,202	8,094	7,467	5,740	5,167	5,481	1,950	...	7,100	4,199
Alfalfa	...	...	2,373	2,439	2,264	1,778	1,880	2,122	1,006	...	2,160	1,670
Vetch (hay)	...	...	1,257	1,922	1,894	1,773	2,236	1,886	771	...	1,864	1,631
Fodder (all hay)	...	...	11,832	12,455	11,625	9,291	9,283	9,489	3,724	...	11,124	7,500
Grapes	4,559	6,157	6,536	2,277	3,622	6,364	6,897	6,389	6,903	5,751	4,088	6,730
Strawberries	73	149	193	222	365	301	210	121	51	138	329	127
Roses	105	78	119	69	37	20	45	32	19	101	42	32

* Data from Bulgaria, Direction générale de la statistique: *Annuaire statistique du Royaume de Bulgarie, 1941* (1941); *Revue de la statistique générale de la Bulgarie et Bulletin mensuel*, 1945, No. 1; *Bulletin mensuel*, 1946, No. 1, and 1947, No. 11. For some other estimates, generally higher, see United Nations, FAO, *Yearbook of Food and Agricultural Statistics, 1947* (Rome, 1947). Production of cockshead and clover, not shown, approximately 50,000 quintals.

TABLE XVII.—MEAT PRODUCED IN SLAUGHTERHOUSES, 1939–47*

Year	Meat produced (1,000 tons)		Number of village slaughtering yards reporting
	In all cities	In villages with slaughtering yards	
1939	43.0	6.7	376
1941	49.0	7.1	464
1942	42.0	7.2	495
1943	23.2	4.3	474
1944	20.1	2.6	466
1945	33.4	4.6	632
1946	17.3	3.2	581
1947	27.9	5.2	716

* Data from Bulgaria, Direction générale de la statistique, *Bulletin mensuel*, 1947, No. 2–3, p. 95.

TABLE XVIII.—DAIRY PRODUCTS MANUFACTURED IN DAIRY ESTABLISHMENTS, 1938–43*

Year	Establishments reporting	Animals milked[a] (*Thousands*)		Milk treated (*Million liters*)		Dairy products manufactured (*Thousand tons*)	
		Sheep, goats	Cows, buffaloes	Sheep, goat	Cow, buffalo	Cheese	Butter
1938	1,131	1,662	12	61.2	8.2	14.0	0.6
1939	1,159	1,851	11	65.2	8.5	16.8	0.7
1940	1,130	1,735	20	51.0	8.0	12.6	0.7
1941	1,143	1,739	12	51.8	7.1	12.2	0.7
1942	1,184	2,122	5	49.8	2.7	10.9	0.4
1943	1,131	2,393	20	48.5	2.4	10.6	0.4
1944	1,038	1,687	18	41.5		7.6	
1945	1,018	1,648	5	30.6		5.5	
1946	890	1,598	7	24.9		3.9	

* Data from Bulgaria, Direction générale de la statistique: *Revue de la statistique générale de la Bulgarie et Bulletin mensuel*, 1945, No. 2; *Bulletin mensuel*, 1948, No. 1, p. 17.

[a] Average daily number during the respective period.

TABLE XIX.—EXPORTS OF FOOD AND TOBACCO TO GERMANY, 1937–43*
(*Thousand tons*)

Important export commodities	1937	1938	1939	1940	1941	1942	1943
Tobacco	12.6	21.8	15.4	16.7	31.7	33.1	40.4
Grapes	30.5	52.5	50.3	35.2	17.3	29.3	9.9
Pulps	2.7	6.2	12.7	27.8	62.6	76.6	80.0
Sunflower seed, soya and other seeds, vegetables, fruits, fodder (excl. cereals)	27.2	54.0	86.6	58.4	68.8	38.2	17.5
Wheat	25.1	16.6	42.3	26.1	—	—	35.0
Corn	5.5	3.0	—	64.9	8.2	14.9	12.5
Dry beans	6.4	—	—	—	9.6	19.5	15.1
Other cereals and beans; cereals and bean products	6.9	2.0	4.9	18.5	7.1	3.3	3.3
Eggs	12.3	10.9	12.0	13.1	16.0	7.7	2.7
Other animal products	7.5	7.3	2.6	2.4	0.8	0.6	0.1
Pigs (*1,000 head*)	20.6	42.5	20.1	8.4	?	—	—

* Data from Bulgaria, Direction générale de la statistique: *Annuaire statistique du Royaume de Bulgarie, 1941* (1941); *Revue de la statistique générale de la Bulgarie et Bulletin mensuel*, 1945, No. 1.

TABLE XX.—GERMANY'S SHARE IN BULGARIA'S EXPORTS OF FOOD AND TOBACCO, YEARLY AVERAGES 1937–39 AND 1940–42, AND 1943*

Group of commodities	Total Bulgarian exports (*1,000 tons*)			Exports to Germany (*1,000 tons*)			(*Percent of total exports*)		
	1937–39	1940–42	1943	1937–39	1940–42	1943	1937–39	1940–42	1943
Tobacco	30	36	48	20	27	40	66	76	83
Fruits, vegetables, seeds, fodder (excl. cereals)	150	156	114	108	138	107	72	89	94
Cereals and beans, cereals and bean products	253	154	85	38	57	66	15	37	78
Animal products (food)	23	22	5	18	14	3	76	61	52

* Data from Bulgaria, Direction générale de la statistique: *Annuaire statistique du Royaume de Bulgarie, 1941* (1941); *Revue de la statistique générale de la Bulgarie et Bulletin mensuel*, 1945, No. 1. Internat. Inst. Agr., *International Yearbook of Agricultural Statistics, 1941–42 to 1945–46* (Rome, 1947), Vol. II.

TABLE XXI.—GERMANY'S PARTICIPATION IN BULGARIA'S FOREIGN TRADE 1939–47*

Years	Exports			Imports		
	Total (*Million leva*)	To Germany (*Million leva*)	To Germany (*Percent*)	Total (*Million leva*)	From Germany (*Million leva*)	From Germany (*Percent*)
1939.....	6,065	4,110	68	5,197	3,403	66
1940.....	7,019	4,152	59	7,028	4,889	70
1941.....	9,234	6,511	71	10,239	7,321	72
1942.....	13,437	9,747	73	12,929	8,104	63
1943.....	16,271	12,796	79	15,131	10,112	67
1944.....	11,357	9,965	88	6,478	4,676	72
1945.....	12,232	60	0.5	5,820	369	6
1946.....	14,942	24	0.2	17,514	63	0.3
1947.....	24,533	181	0.7	21,415	58	0.3

* Data from Bulgaria, Direction générale de la statistique: *Revue de la statistique générale de la Bulgarie et Bulletin mensuel*, 1945, No. 1; *Bulletin mensuel*, 1946, No. 1, and 1948, No. 1.

TABLE XXII.—NORMAL FOOD CONSUMPTION OF URBAN HOUSEHOLDS, 1938/39*

(Kilograms per household per year, except as noted)

Kind of Food	Clerks	Workers
Bread	557	585
Flour (wheat)	52	62
Vermicelli	7	5
Rice	13	14
Dry beans	23	24
Potatoes	53	53
Onions	40	39
Pepper (vegetable)	78	79
Tomatoes	76	75
Fresh beans	30	29
Cabbage	52	49
Spinach	11	9
Vegetables, canned	14	14
Apples	19	13
Plums, fresh	20	16
Plums, dry	5	4
Plum jam	4	3
Nuts	3	2
Grapes	76	69
Watermelons	69	70
Lemons (*number*)	44	29
Olives	1	1
Coffee	0.4	0.3
Tea	0.06	0.06
White pepper (grain)	0.2	0.2
Red pepper (seed)	3	4
Sugar	33	28
Wine (*liters*)	46	52
Beer (*liters*)	3	2
Liquor (*liters*)	2	3
Vinegar (*liters*)	4	4
Sunflower-seed oil (*liters*)	27	32
Chickens (*number*)	9	7
Meat:		
Beef	14	15
Veal	21	14
Mutton	5	7
Lamb	21	21
Pork	20	22
Bacon	6	5
Lard	6	5
Milk, cow, fresh (*liters*)	184	139
Butter, cow	4	2
Cheese:		
Ordinary type	22	22
Cashcaval	3	2
Eggs, fresh (*number*)	274	234
Honey	1	0.7
Salt	10	11

* Data from Bulgaria, Direction générale de la statistique, *Bulletin mensuel*, 1947, No. 1, p. 34, and *Revue de la statistique générale de la Bulgarie*, 1946, No. 3-4. Households of 3–4 members.

TABLE XXIII.—VEGETAL FOOD AVAILABLE FOR HUMAN CONSUMPTION PER HEAD OF TOTAL POPULATION, 1939–45*

Foods	1939	1940	1941	1942	1943	1944	1945
				Kilograms			
Food cereals	266	167	163	90	187	211	117
Feed cereals	212	155	177	97	118	135	43
Sugar beets	36	44	51	32	51	48	18
Oil-bearing crops	24	20	26	13	13	13	5
Beans	15	20	26	18	30	27	10
Potatoes	20	19	28	26	32	16	6
Grapes	96	30	52	90	100	92	107
				Thousand Calories[a]			
All crops	2,216	1,432	1,633	1,133	1,669	1,746	1,016
All crops excluding feed cereals (and corn)	1,462	882	1,002	791	1,252	1,267	864
				Index Numbers			
All crops	100	65	74	51	75	79	46

* Data from Bulgaria, Direction générale de la statistique, *Revue de la statistique générale de la Bulgarie*, 1946, No. 3-4, p. 32; adjusted for classification.

[a] "Net" energy, not clearly defined (see p. 405, note 5).

TABLE XXIV.—WHEAT PRICES, 1929–45

Year	Bulgaria[a] (*Leva per quintal*)			United States[c] (*Dollars per bushel*)	Official exchange rate[f] (*Leva per dollar*)
	Export[b]	Domestic[c]	Producers'[d]		
1929.....	651	667	...	1.30	139
1930.....	394	438	...	0.86	139
1931.....	227	305	...	0.52	139
1932.....	242	334	...	0.53	139
1933.....	203	234	...	0.94	113
1934.....	144	373	315	0.98	84
1935.....	222	394	...	0.92	84
1936.....	266	393	298	1.12	84
1937.....	308	393	315	1.20	84
1938.....	302	395	343	0.70	84
1939.....	157	399	345	0.76	84
1940.....	245	426	431	0.86	84
1941.....	...	554	613	1.12	83
1942.....	...	807	611	...	...
1943.....	...	914	817	...	...
1944.....	...	1,221	1,380	...	...
1945.....	...	1,777	1,700	...	81

[a] Hard and soft wheat.

[b] Prices at Varna and Bourgas, from Bulgaria, Direction générale de la statistique, *Annuaire statistique du Royaume de Bulgarie, 1941* (1941).

[c] Selling price of Cereal Export Directorate (since 1934), from *Annuaire statistique . . . , 1935* and *1941*; *Bulletin mensuel*, 1943, No. 7, and 1947, No. 1.

[d] Buyer price of C.E.D., from *Annuaire statistique . . . , 1937* and *1939*; Haute chambre d'économie nationale, *Narodno Stopanstvo*, 1947, No. 3, p. 25.

[e] No. 2 Red Winter, Chicago, from U.S. Dept. Comm., Bur. Census, *Statistical Abstract of the United States, 1942* (1942).

[f] Through 1941 *Annuaire statistique . . . 1942*, p. 607. After 1933 the actual exchange rate was equal to the official rate plus an official premium (see p. 375). On the development during the war see B. Nedkoff, "The Problem of Foreign Exchange Rates," *Narodno Stopanstvo*, 1947, No. 4, p. 3.

TABLE XXV.—INDEXES OF COST OF LIVING FOR WORKER HOUSEHOLDS, AND OF PRODUCERS' PRICES OF FARM PRODUCTS, 1939–45*

Year	Cost of living		Producers' prices of farm products
	All items	Food	
1939.....	100	100	100
1940.....	112	113	111
1941.....	135	143	143
1942.....	178	199	187
1943.....	226	267	240
1944.....	339	423	358
1945.....	509	641	541

* Data from Bulgaria, Direction générale de la statistique, *Bulletin mensuel*, 1947, No. 1, pp. 9, 35, 38.

TABLE XXVI.—INDEX NUMBERS OF RETAIL FOOD PRICES IN 12 BULGARIAN CITIES*
(*1939 = 100*)

Kind of food	1940	1941	1942	1945
Bread	100	118	172	378
Flour (wheat)	125	218	365	1,141
Vermicelli	106	174	262	1,037
Rice	98	120	139	582
Dry beans	104	90	97	204
Potatoes	105	133	223	826
Onions	74	117	219	735
Tomatoes	129	158	235	1,275
Fresh beans	110	134	190	518
Cabbage	203	247	308	1,372
Spinach	178	242	436	894
Vegetables, canned	103	125	191	450
Apples	137	194	250	544
Plums, fresh	205	265	341	655
Plums, dried	108	222	287	868
Plum jam	100	152	221	426
Nuts	103	179	259	620
Grapes	208	225	276	590
Watermelons	125	197	275	984
Lemons	163	199	256	1,391
Olives	102	105	102	—
Coffee	122	170	259	—
Tea	112	172	220	—
White pepper (grain)	117	176	640	—
Red pepper (seed)	125	143	158	548
Sugar	102	109	122	457
Salt	100	113	145	389
Wine	134	244	306	870
Beer	103	129	162	348
Liquor (plum)	111	196	307	1,095
Vinegar	99	118	127	832
Sunflower-seed oil	112	147	164	659
Chicken	122	149	289	1,113
Meat:				
Beef	107	123	176	547
Veal	115	130	186	597
Mutton	107	125	182	532
Lamb	106	137	227	856
Pork	113	134	177	762
Bacon	104	128	191	662
Lard	109	142	192	1,197
Milk, cow	107	134	191	647
Butter, cow	115	152	188	1,120
Cheese:				
Ordinary type	103	120	137	415
Cashcaval	99	107	120	306
Eggs, fresh	102	132	209	489
Honey	100	121	168	1,436

* Data from Bulgaria, Direction générale de la statistique, *Bulletin mensuel*, 1943, Nos. 1 and 7; 1947, No. 1.

TABLE XXVII.—LEGAL AND BLACK-MARKET RETAIL PRICES OF IMPORTANT FOODS IN SOFIA, JANUARY 1, 1945*

(*Leva per kilogram except as otherwise indicated*)

Foods	Legal	Black market	Ratio (legal price = 100)
Tea	730	4,000	548
Coffee	425	2,000	475
Pepper	1,000	4,000	400
Sugar	130	500	384
Cheese:			
Ordinary type	85	300	353
Cashcaval	120	400	333
Rice	54	150	278
Sunflower-seed oil (*per liter*)	112	300	268
Butter, cow	350	800	229
Meat:			
Pork	224	400	178
Beef	125	200	162
Mutton	135	180	133
Veal	160	200	125
Eggs (*per piece*)	9	15	167
Milk (*per liter*)	30	50	167
Lard	410	600	146
Nuts	70	100	143

* Data from Bulgaria, Direction général de la statistique, *Revue de la statistique générale de la Bulgarie et Bulletin mensuel*, 1945, No. 1, p. 59.

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